Masaryk University
Faculty of Economics and Administration
Study program: Public Economics and Administration

COMPARISON OF SELECTED INSTRUMENT IN THE CZECH AND FINNISH FAMILY POLICY

Microsimulation model

Komparace vybraného nástroje české a finské rodinné politiky za použití mikrosimulačního modelu

Master thesis

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Cíl práce, postup a použité metody:

Objective:
As recent economic crisis made economists and politicians question current approaches, very often is discussed social policy. Should we cut the costs or should we foster the system to provide more secure future? Families with children are the target group, whose importance has recently increased greatly, and they are also getting more of political attention.
Main objective is the comparison of selected instrument of family policy in the Czech Republic and Finland through microsimulation model. In addition, work should be concluded with formulation of recommendations resulting from acquired knowledge. To achieve this goal I will state one instrument of family policy, that is quite similar in both systems, and create simplified microsimulation models for both countries. Then I am going to test several modifications of the instrument through the models and observe their impact on target groups in terms of income distribution.

Procedure and used methods:
1) Timeliness of the topic and description of existing practice in the Czech Republic and Finland
2) Specification of the instrument and modifications that should be tested
3) Collection of data and building microsimulation model
4) Summary and evaluation of acquired knowledge

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MITTON, Lavinia, Holly SUTHERLAND a Melvyn J WEEKS. *Microsimulation modelling for policy analysis: challenges and innovations*. : Cambridge University Press, 2000. ISBN 0-521-79006-9.

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Anotace

Diplomová práce se zabývá komparací vybraných nástrojů české a finské rodinné politiky z hlediska jejich nastavení za účelem nalezení inspirace pro případné úpravy v rámci českého systému. První kapitoly práce je tedy zaměřena na zkoumání teoretických poznatků a dosavadního vývoje rodinné politiky. V druhé části je blíže představena metoda mikrosimulace a výsledky zkoumání. Komparace je provedena nejen na základě získaných informací a dat, ale také na základě simulací několika variant nastavení nástroje provedených prostřednictvím mikrosimulačního modelu.

Annotation

The objective of the submitted thesis: “Comparison of selected instrument in the Czech and Finnish family policy - microsimulation model” is to compare the designs of selected instruments in the Czech and Finnish family policy and to assess the possibility of drawing inspiration for adjustments in the Czech system. At the beginning of this work the focus is on family policy theoretical background and developments in both countries then the microsimulation method and results of simulations are presented. The comparison and recommendations are therefore based not only on obtained theoretical knowledge but also on simulations of selected scenarios through microsimulation model.

Klíčová slova

rodinná politika, rodinné dávky, míra dětské chudoby, Česká republika, Finská republika, mikrosimulační model

Keywords

family policy, family allowances, child poverty rate, Czech Republic, Republic of Finland, microsimulation model

Statement:

I hereby declare that I have worked on the submitted master thesis “Comparison of selected instrument in the Czech and Finnish family policy - microsimulation model” independently under the supervision of Ing. Jana Godarová and Prof. Hannu Laurila, and that I cited all literary and other sources used herein in accordance with the legislation, internal regulations of Masaryk University and internal regulations of Faculty of Economics and Administration.

In Brno, December 2015

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Author's signature

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INTRODUCTION

Recent economic crisis gave most of experts and state representatives the incentive to revise existing practice and take measures in order to stabilize the economy and future development. The attention is drawn to new modern technologies and techniques that can lead to better understanding of economic and political practice. That is why in this thesis I would like to link the two areas that are continuously undergoing many changes and developments and their growing significance is related also to the present economic and demographic development which influences political decision-making.

Herein the first area worthy of attention is family policy because the social importance of the family and its public support has changed a lot during past few years. As we are facing challenges of an aging population and changes in the household structure the emphasis is being put on families and their functions. Along with demographic problems there is the economic crisis that affects political decisions concerning social expenses. This leads to efforts to optimize the system in terms of streamlining costs, outcomes and impacts. Healthy and well-functioning families are important for social and economic development in many ways and the same goes for state support that aims to help them achieve this state. Outcomes of different family policy approaches can be assessed on many levels and one of them is family/child income poverty rate. It is closely tied to direct financial support provided to families with children so another indicator for family policy assessment here can be also the relevant portion of public expenditures aimed to ameliorate financial situation of families.

Second area of interest is microsimulation modeling. It is a very specific economic tool that allows us to analyze the distributional impact of policy changes on population, target groups or even individuals. In many cases it successfully replaces the method of trial and error and enables us to detect weaknesses of the measure before it is put into practice. Moreover it can be used to test the current system for shortcomings, harmful effects and their causes. Apart from all the benefits it also has its limits not only because the process of creation is very complicated and data consuming, but also because the results have to be interpreted very carefully. However its capabilities and areas of use are still expanding thanks to the experts from around the world who are constantly trying to improve this method and explore its possibilities.

The developments and current situation described above are the main reasons why the objective of this work is to compare two different approaches to family policy and via microsimulation modeling assess the possibility to draw inspiration in order to improve the current Czech setting with respect to family/child income poverty. In order to do that the instruments and the mechanism utilized on both sides have to be

studied thoroughly and transformed to formulas and rules that will be used for simulation and creation of alternative scenario.

The first chapter should provide the reader with general information about these two areas in terms of the current trends and development including the introduction to background and current situation concerning families in the Czech Republic and the Republic of Finland. This comprises for example short history overview, type of welfare state, etc. Following two chapters are devoted to more elaborate description of family policy systems in both countries. The objective is to provide the reader with comprehensive information on the setup and functioning of the system that will form a base for further research. Chapter 4 called 'Synopsis and comparison analysis of the Czech and Finnish family policy' summarizes prior findings in order to review similarities and differences in the two systems and therefore making the primary comparison. The fundamental information about previous and current developments of microsimulation models and their application will follow in the fifth chapter. In addition to the theoretical background the reader will be acquainted with several examples and models used in the CR and Finland. Advantages and disadvantages of models and limits of their outcomes are discussed to make the information base complex and objective. Section presenting microsimulation method used in this thesis is also included in chapter five. The sixth chapter comprises information on data source and characteristics of dataset that is utilized for simulations. More importantly the necessary adjustments to the original dataset and baseline analysis can be found there. Baseline analysis than serves to validate the data obtained via adjusted dataset. Chapter seven contains the information about the process of building the models, running the simulations and obtained outcomes including comparisons to baseline and across different scenarios.

1. TIMELINESS OF THE TOPIC AND DESCRIPTION OF EXISTING PRACTISE

If current general social, economic and political priorities are sustainability, responsibility and safe future development (or growth in terms of EU) then high importance of healthy, well-functioning families with children is undisputable. Not only latest recession, but also social evolution (demographical transitions) lead us here. Aging population, changes in size and structure of family households, low fertility, high divorce rate or high child poverty rate remain to be problems in the most of the developed countries. Even Nordic states, that are in long term considered successful in terms of social security and welfare state, commenced complex reassessment projects so they would be able to keep up with changing society. As might be expected those changes and successive reassessments caused a further reaction in the form of new economic and political objectives, conceptual approaches and adjustments. But the search for alternatives and more sustainable and complex solutions continues. Which one of those problems have the most undesirable impact on society? Could and should they be efficiently addressed by state interventions and how? It this thesis the main interest is family policy development with focus on financial situation of families with children and associated problems and challenges. Even though it is inaccurate and the whole policy and ways of achieving its goals is by far more complex, from the many aspects and dimensions the financial support in terms of family policy is reasonably well observable and the most suitable for comparison (BJÖRNBERG, OTTOSEN et al. 2013, p.31).

A problem that has a potential for extensive detrimental implications for the future development of the society as a whole is child poverty. Child poverty especially in early childhood can cause consequential problems with education, health, behavior, emotions, social integration, higher possibility of exposure to socially pathological phenomena and subsequent poverty in adulthood, etc. (ANDERSON-MOOR et. al. 2009) Closely related problem are persistent inequalities in income situation among family types, which in other words means that the most endangered type of family - lone mothers - continue to have low disposable income in long term and families with two children and two parents have kept the status of the least endangered type. This situation can be considered as one example out of many traps in terms of social(family) policy, because we want to help those who are the most at risk of poverty, but we certainly do not want to encourage forming of single parent families even though just ostensibly. However this might occur if we favor single parent families significantly more that the others so they become financially advantageous. With recent development is associated also failure of decommodification caused by lowering the amounts of state financial help and applying more strict rules for entitlement (BJÖRNBERG, OTTOSEN et al. 2013, p. 32). Fighting poverty and social exclusion in general is strongly

emphasized among Europe 2020 "headline targets" with reference to statistics from 2011 which inter alia show that children in Europe suffer from rather high poverty rate (27% in poverty or socially excluded) so the importance of the topic is in a way already recognized and hopefully a significant progress will follow in near future (European Commission 2015).

Development in microsimulation modeling definitely opens a wide range of possibilities for observation of social and economic changes at the level of smaller economic units such as households, families or individuals. It can contribute to better informed political decision making, or to better understanding of policy impacts on population and public finance. This is very important when we want to assess the impact of suggested changes on individual income situation, poverty rate or their budgetary implications. As a modern promising method it is being developed by statistic institutions all over the world and it certainly has as an important role in future social-economic analyses. Unfortunately so far we can find probably as many challenges to overcome as benefits - it is complex but highly data demanding, it meliorates information base but it is also very costly, etc. Current priorities within EU - represented by microsimulation model EUROMOD - are mainly cross-country comparison, planning and monitoring the progress in achieving common targets as mentioned above. More detailed description of past and current trends in microsimulation in general and in the context of both countries of interest here is given in chapter 5.

1.1 Introduction to the current situation in family policy in the Czech Republic and Finland

The **Czech Republic** (herein also as CR) is one of the post-communist countries, which means it has undergone many changes and attempts at recovery in the past 25 years. Those years also brought a few very important milestones such as entry to NATO, EU or recent economic crisis. In terms of the social system the main long-term goal is to gradually change it in order to cut expenditures and improve its efficiency and sustainability. The most important changes began in **1988** when for example **The Social Security Act. No. 100/1988 Coll**. and the Concept of Family policy were introduced. Theory distinguishes several models of family policy and also its aims. According to OECD the Czech Republic belongs to the category of “policies in transition”(THÉVENON 2011, p. 15). At the beginning of transition it was focused mainly on universal financial transfers and social welfare safety net within social policy. Then the demographic situation started to change: fall in marriage rates, rise in the divorce rate, lower birth rate and fertility, change in women’s family and professional roles, etc. That resulted in the expansion of individualism and social atomization and simultaneously accelerated the development of family policy and its instruments towards the means-tested benefits and services in order to protect and

encourage all functions of the family (MLSA 2004, p.10-11). Economic crisis intensified concerns about fiscal sustainability and the need to assign a higher priority to it which resulted in several conceptual changes in tax system and major cuts in expenditures starting from 2008 not only within the family policy. Efforts were made to simplify the tax system and to achieve savings in the welfare system by posing more strict conditions for entitlement therefore limiting the number of recipients of benefits to those most in need. Recent changes also suggest that the lingering problem of insufficient child care services is finally being addressed (see chap. 3).

History of the **Republic of Finland** is in several respects quite similar to Czech history. The first independent republic was founded in 1917 when it separated itself from Russia. But problematic Russian relations caused some difficulties again during World War II, after which Finland had to undergo a part of its territory to Soviet Union. Finland was rather prudent in its policy because the Soviet Union swallowing states in Eastern Europe still posed a thread. But it managed to maintain its independence and democratic system (MFA 2015). By the time the Soviet Union collapsed Finnish family policy was already rapidly developing. Finland adopted social democratic welfare state later than the other Nordic countries but on the other hand the process of transformation was rather rapid (OSTNER, SCHMITT 2008, p. 76). In 1948 family allowance scheme was introduced and those allowances became a very important part of the rural families' income. In 1956 Social Assistance Act reform followed and it was also a step forward to a welfare state (NIEMELÄ, SALMIEN 2006, p. 11-12). In **1963** was introduced **Sickness Insurance Act** which covers compulsory sickness insurance in Finland. That means insurance in case of illness, pregnancy and childbirth. There are two main forms of compensation included: medical care insurance covering the necessary costs incurred by illness, pregnancy and childbirth, and daily allowance insurance to compensate for loss of earned income due to these circumstances (NIEMELÄ, SALMIEN 2006, p. 13-14). Finland also entered EU almost ten years earlier than CR and with NATO cooperates through the Partnership for Peace program (NATO 2014). In terms of family policy model Finland is one of the "Nordic countries", which are considered as ones with the most advanced system of support for families with children especially because of wide range of services (THÉVENON 2011, p. 15). On the other hand the system is very complex, complicated and one of those more costly.

2. FAMILY POLICY IN CZECH REPUBLIC

The official body responsible for conception, coordination and implementation of family policy in the Czech Republic is **the Ministry of Labour and Social Affairs** (hereinafter MLSA). Requests for the provision of social welfare benefits and their payments are handled by the Labour Office of the Czech Republic[1] in accordance with the applicant´s place of residence (MLSA 2015a).

Support for families with children is provided via the national social security system mostly in three different forms. One of them comprises national social insurance system from which the state social support is provided, sickness insurance system, assistance in material need, foster care benefits and also disability benefits. Another is tax system which includes tax deductions also intended for the families with children (MLSA 2015b). The third main type of state support for families are services. From the financial point of view the latter two are considered as indirect support and the former as direct (financial) support. Direct financial support responds to particular income situation of families and has an important role in protecting them from poverty. Tax deductions are also aimed to alter financial situation but their impact is usually limited to one time during the annual clearing of taxes. That is the main reason why the following text describes financial benefits and also tax deductions in detail, because they will be important for the following simulation. The services provided to families with children mainly consist of support of day care centers, kindergartens, social counseling, social care services, and services supporting well-functioning family. (MLSA 2015b)

2.1 State financial transfers to families with children

Before describing the various benefits of Czech family policy system we must pay attention to the rules and instruments that form a common base for the most of them. The first basic rule for entitlement to any benefits provided by state is condition of being registered as permanent resident in the Czech Republic. (Act no. 117/1995 Coll., on State Social Support, §3) Even though state social security policy has three pillars[2], majority of transfers to families with children is provided mainly through two of them – the social insurance (which includes sickness insurance and pension insurance) and the state social support, while social help allowances may be drawn by families with children they are mainly designed for those who suffer from material poverty. Foster care benefits are no longer provided under the state social support

[1] The Labour Office has 14 of regional branches in the Czech Republic.

[2] Social insurance, state social support and social help

policy but within the legal framework of child protection[3] (Act no. 359/1999 Coll. on Child protection). Disability benefits and assistance in material need are provided not only to families with children but to all citizens under the same conditions, so they are not typical instruments designed for family policy purposes and they are not parsed in more detail here. Participation in social insurance is obligatory for all citizens of the Czech Republic who are employees (including public sector) and partially voluntary for those who are self-employed (Act No. 187/2006 Coll. on Sickness Insurance, §5). This means that entitlement to some of the benefits binds to previous participation and contribution to those insurance systems and some are linked to specific income or social situation.

To determine the amount of benefit and to ensure that the necessary support is provided the most important benefits are means-tested. In some cases individual/household income is compared to living minimum which is prescribed by the law and adjusted with the passage (depending on economic development[4]). Living minimum[5] is defined as socially recognized minimum level of income for obtaining nutrition and other basic needs. Its main aim is to monitor risk of poverty. For benefits significant in terms of their amount were created more thorough ways of testing and computing so they are more addressed and cost-effective.

Very important and very complicated tool in Czech family policy is daily assessment base which is used for calculating accorded amount of several types of benefits. Daily assessment base (hereinafter „DAB") should help the distribution of benefits according to the current financial situation of the family and also according to its previous contribution to the sickness insurance. It is computed as income for the last 12 calendar months divided by the number of calendar days in the relevant period so we get average daily income (hereinafter „ADI") and then adjust it according to the reduction limits.[6] The higher reduction limit the lower percentage of daily average income is counted in daily assessment base – this reflects the intention to help especially those who need it the most. At the end actual benefit is counted as a percentage of the computed DAB. (Act No. 187/2006 Coll. on Sickness Insurance, §18) As the process is complicated it will be explained through example below.

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[3] Adoptive parents can claim the same benefits as biological parents.

[4] Changes in inflation rate and average monthly wage

[5] For details about amounts please see the Appendix 1

[6] The amounts of reduction limits are announced annually in the form of a statement of the MLSA. In 2014 the first reduction limit (hereinafter „RL") is 865 CZK, the second RL is 1298 CZK and the third is 2595 CZK. (**Sdělení Ministerstva práce a sociálních věcí č. 331/2013 Sb.)**

Example: Anna is entitled to maternity benefit. Her gross monthly income is 30 000 CZK[7].

Average daily income: (12*30000)/365=986.3

Reduction:

1st RL= 865 CZK – 100% counted in 865.00

2nd RL= 986.3-865= 121.3 – 60% counted in 72.78

3rd RL = income is not high enough to reach this limit, otherwise the part of income between the 2nd and the 3rd limit would be counted in only in amount of 30%

The part of ADI above the 3rd RL shall not be taken into account

Daily assessment base – **rounding**: 865+72.78=937.78 rounded to **938** CZK

Daily maternity **benefit** is counted as 70% of DAB = 938*0.7=656.6 rounded to **657** CZK

The example here serves mainly to illustrate the work with reduction limits and the procedure for determining the daily assessment base from which a few of benefits is derived. The rules of entitlement and other specifications for individual benefits will be elaborated below. All important parts of the process are highlighted in order to emphasize for example that rounding is done when reduction is finished and all the parts are summed up (not during) and that actual amount of benefit differs from the amount of DAB depending on the rules for the benefit in question.

2.1.1 Benefits provided under the sickness insurance

Some of the benefits are provided via sickness insurance system which is regulated through the **Act No. 187/2006 Coll. on Sickness Insurance.** This category includes maternity benefit, pregnancy and maternity compensation benefit and family member care benefit.

Maternity benefit

Maternity benefit is designed for pregnant women who have the status of employee, student or self-employed (voluntarily participating) and decide to take maternity leave before expected date of confinement. The status matters, because basic condition for the entitlement to this benefit is previous contribution to sickness insurance system as mentioned above. The minimum required length of contribution period is 270 days during past 2 years. The support period is 28 weeks. The law allows the

[7] The exchange rate published by Czech National Bank on the 16th of December 2015 is 1 EUR = 27.030 CZK

mother and the father of the child (or mothers' husband) to take turns in taking care of the child[8]. While doing so each of them is entitled to payment of maternity benefit. The amount of maternity benefit is 70% of the DAB (Act No. 187/2006 Coll. on Sickness Insurance, §32-38).

Pregnancy and maternity compensation benefit

This benefit belongs to a woman who was due to pregnancy, maternity of breastfeeding transferred to another job and therefore achieves lower income than before transferring - not by her fault. This benefit is paid from the date of transfer to other work until the start of Maternity benefit period. It is determined as the difference between the amount of DAB on the day of transfer and the average income per a single calendar day after transfer (Act No. 187/2006 Coll. on Sickness Insurance, §42-44).

Family member care benefit

An employee is entitled to this benefit if he/she cannot work because he/she has to take care of:

- sick family member,
- child younger than 10 years because,

school or childcare facility was closed (due to accident, epidemic, etc.) , the child was quarantined or a person who otherwise cares for the child fell ill. The support period for this allowance is no more than 9 calendar days.[9] The amount is calculated as 60% of the DAB (Act No. 187/2006 Coll. on Sickness Insurance, §39-41).

2.1.2 Benefits provided under State social support

State social support system is regulated by **Act. No. 117/1995 Coll., on State Social Support**. It addresses *"socially acknowledged situations where the state partially assumes the co-responsibility for the arisen social situation by providing financial support."*(MLSA, 2015b). This system includes parental allowance, child allowance, housing allowance, birth grant and funeral grant (Act. No. 117/1995 Coll., on State Social Support, §2).

[8] The father (husband) has to take care of the child for at least 7 consecutive calendar days. (MLSA, 2014)

[9] For lone parent (employee) taking care of at least one child under the age of 16 years (who has not completed compulsory schooling) the support period does not exceed 16 calendar days. (MLSA, 2014b)

Parental allowance

One of the most important benefits for families with children in terms of financial support is Parental allowance. It is designed for a parent that personally and duly cares for a child who is the youngest in the family. Parent may draw support up to an amount of 220 000 CZK and until the time the child reaches 4th year of age. That means that this is long-term allowance of high importance to the most of the families. If at least one parent in a family is participating in sickness insurance there is an opportunity to choose the amount of allowance and period of duration in a manner that a higher allowance can be drawn for shorter period or lower allowance for longer period. For the amount only upper limits are set and they are derived from calculation of 70% of 30 multiple of daily assessment base. The maximum amounts of monthly allowance are set at

- CZK 7 600 for results less or equal to CZK 7 600
- calculated amount for results higher than CZK 7 600
- CZK 11 500 for results higher than CZK 11 500

While determining the eligibility for parental allowance parent´s income is not tested but entitlement is conditioned by limits on time that child spends in crèche, pre-school or other facility for children in pre-school age (Act. No. 117/1995 Coll., on State Social Support, §30-31).

Child allowance

Child allowance is means-tested long-term benefit provided on monthly basis. Amount is increasing depending on the age of the child in a manner that three age groups are defined and each is assigned different amount.

- CZK 500 for children under 6 years of age
- CZK 610 for children aged from 6 to 15 years
- CZK 700 for children aged from 15 to 26 years

A dependent child up to age of 26 is eligible for this allowance under the condition that he/she is living in a family with an income of less than 2.4 times the family´s living minimum.[10] (Act. No. 117/1995 Coll., on State Social Support, §17-19)

[10] For the amount of living minimum please see Appendix 1.

Housing allowance

This benefit is aimed not only to families but for all people who have too high housing costs in comparison to their income. To be entitled to a housing allowance person must be a permanent resident in property concerned. Another requirement is that 30%[11] of family income is insufficient to cover housing costs and is also lower than the relevant prescriptive costs set by law. Prescriptive costs represent average housing costs depending on size of the municipality and number of members of the household. Costs of services and energy are included. Government regulation stating the amounts of prescriptive costs is issued every year. The amount of the allowance is computed as:

housing costs or prescriptive housing costs[12] – (the relevant family income * by coefficient 0.3[13]).

Prescriptive costs are divided into five groups depending on the amount of population in a city of residence. These costs in each group are set lower if the housing is not rented, but owned or in cooperative ownership (Act. No. 117/1995 Coll., on State Social Support, §24-28).

Birth grant

Onetime benefit designed especially for low-income families in order to mitigate the costs related to the birth of their first child or second child. That means that family income is tested with respect to subsistence minimum. Family is entitled to birth grant if its income for the calendar quarter prior to the birth of the child did not exceed 2.7 times the family's living minimum**.** The amount is fixed at 13 000 CZK for the first born child, 10 000 CZK for the second born child or 23 000 CZK in case of multiple births. Not only amounts but also income limit for entitlement were increased under recent amendments and the new setting is applicable from the 1st of January 2015. Therefore, compared to 2014, birth grant is now accessible for greater number of families (Act. No. 117/1995 Coll., on State Social Support, §44-46).

Funeral grant

Funeral grant is another onetime benefit and the fixed amount is 5 000 CZK. It is provided to a person who arranged a funeral of dependent child, or parent of dependent child. The only condition is that the

[11] 35% in Prague

[12] for the calculation is relevant the lower of the two

[13] 0,35 in Prague

deceased was a permanent resident of the Czech Republic on the date of death. (Act. No. 117/1995 Coll., on State Social Support, §47-48)

2.1.3 Foster care benefits

Foster care benefits are an integral part of family policy as they serve to facilitate the functioning of foster families and in this way contribute to the improvement of the living conditions of children in general. One time contribution is provided to a person once she/he is takes the child into foster care. The amount of this contribution differs depending on age of the child (the older child, the higher amount) (Act no. 359/1999 Coll. on Child protection, §47l)[14]. Foster parents can claim **grant for covering the child's needs**. This benefit is paid out monthly in different amounts depending on child's age and degree of dependence on parents (Act no. 359/1999 Coll. on Child protection, §47f - 47g). When the entitlement to grant for covering the child's needs expires the child has a right to one time contribution of CZK 25,000 that is called the **termination of foster care grant** (Act no. 359/1999 Coll. on Child protection, §47h). Another benefit in this category is **foster parent remuneration** for one person who is registered and cares for the child. It is a monthly benefit and it is treated as income from employment for the purposes of taxes and compulsory social insurance contributions (Act no. 359/1999 Coll. on Child protection, §47i - 47k). If a person cares for at least three children and buys **vehicle** she/he is entitled to **subsidy** for a 70% of the purchase price of the vehicle but up to the maximum of CZK 100,000 (Act no. 359/1999 Coll. on Child protection, §47m).

2.2 Tax deductions for families

Apart from direct financial support in the form of benefits, the family is also supported through tax reliefs within the income tax system which is regulated in **Act No. 586/1992, on Income Tax.** Unlike social benefit system this kind of support does not reduce the motivation of family members towards achieving their own income, on the contrary it is meant to support it. In a long term there are mainly two stable measures intended for families with children: *„Tax advantages for dependent children living with a tax-payer in a common household (in the form of tax relief, tax credit, or a combination of the two, if applicable) and the tax relief for a spouse."* (MLSA, 2015b). By the end of 2014 the amendment to the Act No. 586/1992, on Income Tax was issued under no. 267/2014 Coll. and it brought many adjustments that also apply to families with children. Parents can claim tax deduction equal to the cost of nursery,

[14] Foster care benefits are regulated under the Act on Child protection since 1st January 2013, but they were regulated by Act on the State social support (MLSA, 2013b).

kindergarten services or other pre-school childcare facilities (Act No. 586/1992 Coll. on Income Tax, §35bb).

The child tax relief/bonus

This alleviation can be claimed for a dependent child living with the taxpayer in a household. It may take a form of a tax relief, but also a tax bonus (applicable benefit exceeds the calculated tax, therefore there is no tax liability but a tax bonus). It is deducted from the calculated tax. This relief is applicable only if person´s taxable income during tax year reached at least six times the minimum wage.[15] The amendment No. 267/2014 Coll. mentioned above introduces different yearly amounts of deduction depending on number of children in the family

- CZK 13 404 for the first child
- CZK 15 804 for the second child
- CZK 17 004 for the third and each additional child

For the payment of the bonus limits are set at a maximum amount of 60 300 CZK and the minimum of 100 CZK per year[16] (Act No. 586/1992 Coll. on Income Tax, §35c).

The tax relief for a spouse

A tax deduction for a spouse can be claimed if she/he is living with the tax-payer in a common household and her/his own income does not exceed CZK 68 000 in a calendar year. This tax relief can be exercised up to CZK 24 840 annually for a dependent spouse. Received social benefits are not included in the income of a dependent spouse (Act No. 586/1992 Coll. on Income Tax, §35ba).

Preschool childcare facility cost deduction

As mentioned above - starting from tax declaration for 2014 - parents can claim tax deduction equal to verifiable costs of nursery, kindergarten or other services for their child (living in the same household). Nutrition expenditures are not included. The amount is tied to minimal wage, which means that deduction can be up to 9 200 CZK for each child in respect of tax declaration for 2015 (Government regulation No.

[15] Minimum wage is CZK 8 500 per month or CZK 50,60 per hour in 2014. For 2015 the minimum wage is set at CZK 9 200 per month or CZK 55.66 (MLSA, 2015d).

[16] Maximum of CZK 5 025 and minimum of CZK 50 per month

204/2014 Coll.). Only one parent can claim this deduction and it does not apply to costs for private nanny or payments to family members, etc. (Act No. 586/1992 Coll. on Income Tax, §35bb)

2.3 Services provided to families with children

Apart from financial support several types of services are provided to families with children such as social counseling, social care services, and services in support of a functioning family – mother centers, provision of leisure activities for children, support of reconciling professional and family roles, education in harmonic partnership, marriage and responsible parenthood, etc. (MLSA, 2013). Also kindergartens belong to this category. Unfortunately there are considerable problems that need to be addressed. Child care for small children under the age of 3 is insufficient and its accessibility varies greatly among regions, mainly because it is under administration of municipalities not state itself. These services are getting more attention lately and new ways of support were introduced in 2014 taking effect from 2015 (Nečas, P., 2008). Which also means that in terms of services, establishing Children´s groups can be considered as major step forward.. The concept of Children´s groups is regulated within the new Act no. 247/2014 Coll. about providing services of child care in child group. Apart from improving reconciliation of work and family life the Children´s groups are supposed to compensate for the lack of capacity in the kindergartens and other day care facilities for children under three years of age. They are associated with tax reliefs and lower administrative demands compared to regular kindergarten [17] (MLSA, 2013c).

[17] Children´s group provides regular care for a child aged from six months until the start of compulsory schooling, in a group of children outside the regime of regulations on schools and school facilities.

3. FAMILY POLICY IN THE REPUBLIC OF FINLAND

In the Republic of Finland the authority responsible for formulation and coordination of family policy is the **Ministry of Social Affairs and Health** (hereinafter MSAH) which takes care of social welfare and health care services development in general. There are several legal regulations that comprise the most important legal guidelines for family policy in Finland. For example Employment Contracts Act 55/2001 which incorporates rules for entitlement of leave for family reasons. Highly important is also Act no. 1224/2004 on Health Insurance which regulates provision and amounts of parenthood allowances including those for adoptive parents[18] (MSAH, 2015). Benefits are safeguarded by **Social Insurance Institution named KELA**. KELA is government agency which handles retirement pays, child benefits, unemployment benefits, sickness benefits, health insurance and student benefits. It has also three main regional offices: Insurance Region of Southern Finland (Lahti), Insurance Region for Western Finland (Seinäjoki and Turku), Insurance Region for Eastern and Northern Finland (Oulu). Those are further divided into insurance districts with several customer service points(KELA, 2015). KELA helps to convey information about (but not only) Finnish state family support to English as the relevant legislation is accessible mostly only in Finnish and translations would be cumbersome and possibly endangered by misinterpretations for those who are not native Finnish speakers.

There is one common rule for entitlement of family benefits that should be mentioned before the others as allowances are tied to health insurance. The insured must have lived in Finland for at least 180 days before the due date of their baby in order to by entitled to parenthood allowance. Also insurance periods in other EU countries are considered comparable and are taken into account for the purposes of assessing eligibility (Act no. 1224/2004 Coll. on Health Insurance ch.9, s. 1, p. 1).

Unlike in the Czech Republic, support provided to families with children via tax reliefs is less favored in Finland. Most of the family-based tax deductions were abolished in 1976 in order to simplify and clarify the taxation system (MSAH, 2013b, p. 15). This means that nowadays only the tax credit for child maintenance and the child tax credit remain (Finnish Tax Administration, 2014).

Provision of services to families is on the other hand is very similar in both countries. Therefore in Finland are also provided day care services, preschool education, child guidance and family counseling services,

[18] Benefits for adoptive parents are again mostly the same as benefits that biological parents can claim.

etc. Various regional family services are provided by family centers to form wide-ranged network more effective in ensuring necessary help (MSAH, 2013, p. 27).

3.1 Benefits provided to families with children

Finnish family policy has certain rules that apply to several benefits and that should be elaborated before individual benefits will be described. Set of specific rules applies to the calculation of amount of parental allowances, i.e. maternity allowance, special maternity allowance, paternity allowance and parental allowance, which are all calculated the same way. The amount is calculated on the basis of previously taxed earnings for previous tax year. The minimum is set at € 24.02 per working day[19] (KELA, 2015b).

The rules for calculating the **amount** are as follows:

- *according to your taxable earnings when you have been working.*
- *according to the earnings for the 6 months preceding the allowance period if your earnings have increased by at least 20% from your taxed earnings.*
- *according to the benefit preceding the allowance period if, for example, you have studied or been in rehabilitation, sick or unemployed.*
- *at the same amount as the previous parental allowance if your older child is under 3 years of age at the time of the estimated date of delivery of the new baby.*
- *according to income from short period of work if it is higher than your taxed income (e.g. if a mother has returned to work for a short period)* (KELA, 2015b)

Rule for calculating the allowance for second baby: If older child is under 3 years old on the day of new baby's estimated date of delivery, parent may qualify for allowance on the basis of the same income as for older child. If the previous allowance has been calculated on the basis of a benefit and not earnings, this method of calculation cannot be used (KELA, 2015b).

Maternity grant

Maternity grant is designed for expectant mothers whose pregnancy has lasted at least 154 days and who has undergone a health examination before the end of the fourth month of pregnancy. This applies also to adoptive parents except those who adopted child from abroad without approval of the Finnish Adoption

[19] Working days are defined as Monday to Saturday with public holidays excluded (KELA, 2015b).

Board. It is a **onetime contribution** of € 140. Maternity grant can be increased in case of multiple births. This means that for twins the total amount can be € 420 and for the triplets up to € 840. Expectant mother can also choose maternity package instead of maternity grant. Maternity package contains set of items for children (clothes, towels, etc.). This grant is not a subject to taxation (KELA, 2012).

Maternity leave and maternity allowance

Expectant mother can choose to start the maternity leave from 50 to 30 working days before the estimated date of delivery. Maternity allowance is paid during the maternity leave for 105 working days. The condition for entitlement is that pregnancy has lasted 154 days and expectant mother has been covered by the Finnish social security (or another EU or EEA country, Switzerland or Israel) for at least 180 days before the estimated date of delivery. If employer pays wages to expectant mother during maternity leave, the maternity allowance is paid to the employer.

It is allowed to work during maternity leave but the allowance will be paid at minimum-rate for the days mother is working and at full-rate for the other days. Same rule applies when mother is a student during the maternity leave and receives student financial aid (KELA, 2013).

The amount is higher during the first 56 days of maternity leave. Different rates are used to calculate the amount of daily allowance depending on previous annual earnings before tax deduction (hereinafter PAE).

- minimum of € 24.02 per working day pro PAE lower than € 8 010
- 90% of PAE from € 8 010 to €56 302
- decreasing rate for PAE higher than € 56 302

For the rest of the maternity leave the calculation is slightly adjusted

- minimum of € 24.02 per working day pro PAE lower than € 10 297
- 70% of PAE from € 10 297 to € 36 420
- decreasing rate for PAE higher than € 36 420

If a mother is working during maternity leave the amount is at minimum flat rate for those days (SALMI, LAMMI-TASKULA, 2015). For the earnings above the upper limits, the percentage for calculation is always lower and there is progressive tendency (the higher the income above the limit, the lower the percentage of it is paid as allowance (KELA, 2015o).

Special maternity allowance

This benefit is provided to expectant mothers that have to stop working before they are eligible for maternity leave/allowance. It applies when the expectant mother is exposed to health hazards that cannot be avoided in her work and her employer is unable to arrange other tasks for her during pregnancy. The amount is the same as would maternity allowance be and it is paid until the regular maternity allowance period starts (KELA, 2013b).

Paternity leave and paternity allowance

To be entitled to paternity allowance father must be covered by the Finnish social security (or insurance from EU, ETA country, Switzerland or Israel) for at least 180 days before the estimate date of delivery. And he should also live with the mother of the child or if they have separate addresses it shouldn't be due to a breakdown of the relationship. This benefit is also accessible to adoptive fathers and persons in a registered partnership under certain conditions. Paternity allowance can be paid during Paternity leave (father can choose not to claim allowance even though he takes up the leave) , which can last up to 54 weekdays, and fathers can choose the days for which to claim this allowance except for Sundays and holidays. Up to 18 days of this leave/allowance can be claimed/drawn while both parents are at home taking care of the child. But if the employer pays a salary to the father during the paternity leave, the paternity allowance is paid to the employer. Father can go on paternity leave after the child's birth until the child reaches 2 years of age – so father can take it up when parental leave/allowance ends. Leave can be also taken in several separate periods (KELA,2014).

The calculation of the amount is derived from previous annual earnings in quite similar manner as for maternity allowance. For the first 30 days it is

- minimum of € 24.02 per working day pro PAE lower than € 9 610
- 75% of PAE from € 9 610 to €56 302
- decreasing rate for PAE higher than € 56 302

For the rest of the paternity leave the calculation is slightly adjusted

- minimum of € 24.02 per working day pro PAE lower than € 10 297
- 70% of PAE from € 10 297 to € 36 420
- decreasing rate for PAE higher than € 36 420

During the days when both parents are at home and mother receives maternity or parental allowance the amount of paternity allowance is as it would be from the 31st day. Also during this leave mothers and fathers can work, but the allowance is at minimum flat-rate for those days a parent is at work (SALMI, LAMMI-TASKULA, 2015). Again lower percentage rate is used for calculation if earnings exceeded the upper limits and the same rules apply as for maternity allowance (KELA, 2015o).

Parental leave and parental allowance

Mother of father can take parental leave and it starts after maternity leave. During parental leave the parental allowance is paid by Kela for 158 working days (Monday – Saturday, except holidays). The parents can take turns in taking the parental leave, resp. allowance, but each can take maximum 2 separate periods and the minimum length of one period is 12 days. In case that the parents are both working part time, each can receive partial parental allowance at the same time. The amount is calculated in accordance with the same rules as for paternity allowance described above (SALMI, LAMMI-TASKULA, 2015).

Parental allowance is treated as **taxable income** (KELA, 2012b).

Child home care allowance

Parents can claim child home care allowance for a child less than 3 years old under the condition that the child is not in municipal day care.

„Child home care allowance includes a care allowance and a care supplement, which depends on the family's income. The family's income has no effect on the care allowance. Therefore, the parents can be at no work or, for example, on paid annual leave at home and receive care allowance."(KELA, 2015c)

As the care allowance is not affected by the family income, it is paid in fixed amounts:

- € 342.53 per month for one child under 3 years of age
- € 102.55 per month for each additional child under 3 years of age
- € 65.89 per month for a child over 3 years of age but under school age

The supplement on the other hand is dependent on family income and also on the size of the family. The maximum amount of the supplement is € 183.31 per month and if family income exceeds income limit[20]

[20] As minimum amounts for other benefits also income limits are indexed each year (KELA, 2015p).

determined by family size (see table below) the amount of supplement will be reduced by certain percentage of exceeding amount. For example for a family of size 3 (2 adults and 1 child under school age) with income € 1 580, the care supplement would be calculated as:

= 183.31 – (1 580-1 430)*0.094 =183.31-14.1=169.21

Tab. 3.1 Limits for calculation of care supplement (Home care)

Family size (number people)*	Income limit to receive full amount (€/month)	Reduction (%)	Income limit to receive no supplement (€/month)
2	1 160.00	11.5	2 753.96
3	1 430.00	9.4	3 380.06
4 or more	1 700.00	7.9	4 020.32

**Family size includes up to 4 people: 2 adults and up to 2 children under school age. A child on the basis of whom the parental allowance is paid is not included in the number of people in the family.*

Source: Kela, Child Home Care Allowance – Amount, 2015

Child home care allowance is also a **taxable income** (KELA, 2012c).

Private day care allowance

Private day care allowance is another benefit divided in care allowance paid in fixed amounts and care supplement paid in accordance with family income and family size. The allowance can be claimed by a parent living in the same household with an under-school-age child who is not in municipal day care (and no place in municipal day care has been reserved). However the child can be looked after by a nanny hired by the family or by a private day care provider (KELA, 2015d).

As a private day care provider is considered private person who is not living in the same household with the child and has signed with the family a contract of employment for at least one month. This person also must be approved by the local authority as a child-care provider. Allowance is always paid to the day care provider and therefore it is subject to tax for the day care provider not for family (KELA, 2015d).

Care allowance is set at € 173.64 per month for each child eligible for this benefit. If the child takes part in municipal pre-school education one year before the school starts it is still possible to claim private day allowance but it will be paid at reduced rate of € 63.89 per month (KELA, 2015e).

Care supplement is calculated in the same manner as the supplement for the Child home care allowance except for changes in upper income limit which you can see in table below. (KELA, 2015e)

Tab. 3.2 Limits for calculation of care supplement (Private care)

Family size (number people)*	Income limit to receive full amount (€/month)	Reduction (%)	Income limit to receive no supplement (€/month)
2	1 160.04	11.5	2 753.96
3	1 430.05	9.4	2 989.95
4 or more	1 700.06	7.9	3 556.14

**Family size includes up to 4 people: 2 adults and up to 2 children under school age.*

Source: Kela, Private Day Care Allowance – Amount, 2015

Flexible care allowance

Mother and father (also adoptive parents and same-sex parents) are eligible for flexible care allowance if they have an employment contract (or are self-employed) and they don't work more than 30 hours per week (or more than 80% of normal full-time hours) in order to take care of the **child under 3 years** of age. Both parents can receive this allowance if they are looking after the child at different times. Even parent who does not live in the same household as the child can be eligible for this allowance. It is paid only for one child at a time and cannot be paid if parent receives special maternity, maternity, paternity, parental or home care allowance (KELA, 2015f).

The amount in not affected by family´s income but it depends on total working time of the parent.

- no more than 60% of normal full-time hours: **240 EUR**
- between 60% and 80% of normal full-time hours: **160 EUR**

Flexible care allowance is **subject of taxation** and can be treated as sideline income if tax card for sideline income is submitted to Kela, however if the allowance is the only taxable income of the parent tax for wages is applied and withholding rate is at least 20% (KELA, 2015f).

Partial care allowance

Partial care allowance is designed for children attending the first and second year of school. But important condition is that parent is working at maximum 30 hours per week (for example 6 hours per day or fewer working days) in order to be able to take care of the child. The contract of employment is necessary to qualify for the leave/allowance. The amount of allowance is set at € 97.67 per month. It is paid only during the school year (from 1st August till the end of July of the second year in primary school) and not for shorter period than one month. It is also paid only for one child at a time. (KELA, 2015g)

"Both parents can take partial care leave/allowance as long as they share the responsibility for looking after the child and are not off work at the same time."(KELA, 2014b)

Also parent who does not live in the same household with the child can claim this benefit. But the allowance cannot be claimed if parent receives child home care allowance, parental allowance, flexible care allowance or is on sick leave for over 4 weeks (KELA, 2014b).

Partial care allowance is **subject of taxation** and can be treated as sideline income if tax card for sideline income is submitted to Kela, however if the allowance is the only taxable income of the parent tax for wages is applied and withholding rate is at least 20% (KELA, 2015g).

Child allowance

Child allowance is provided to children from the beginning of the month following the birth of the child until the end of calendar month when the child reaches the age of 17 or moves abroad. As the table below shows benefit if paid monthly according to number of children (KELA, 2015h).

Tab. 3.3 Amount of child benefit according to number of children EUR/month

Number of children	Amount in EUR/month
1st	95.75
2nd	105.80
3rd	135.01
4th	154.64
5th	174.27

Source: Kela, Child benefit – Amount, 2015

"Child benefit can also be paid to other custodian and, exceptionally, to a child who has reached the age of 15. If the child is in a children's home or in family care, child benefit can also be paid to the local authority or family carer."(KELA, 2015h)

There is also supplement of € 48.55 provided to single parents. The supplement is also paid on monthly basis (KELA, 2015i).

Special care allowance

Support provided in order to enable parent to take care of seriously ill or disabled child under the 16 year of age. It is paid at minimum rate € 24.02 per day during the period up to the 60 workdays (during calendar year) per child (KELA, 2014c).

Housing allowance

General housing allowance is designed for low-income households. The eligibility depends on the number of persons in the household, size of the home and its other main characteristics, household´s assets and monthly income before taxes (KELA, 2015j).

Allowance is calculated on the basis of reasonable housing costs, which are established by law and Government decision. Limits of reasonable housing costs vary according to the municipality in which the home is located and also according the size of the home and the number of residents (KELA, 2015q) The housing allowance is at most 80% of reasonable housing costs and basic deductable is deducted from the amount of reasonable housing costs if household´s income is more than the threshold set by the Government (KELA, 2015k).

Housing allowance = (reasonable housing costs – basic deductible) * 0,8

A housing costs are considered

- rent + heating or water charges if separated
- maintenance charge + heating and water charges in right-of-occupancy and partial-ownership homes
- part of the interest paid on housing loans is also accepted in case of unit in housing co-operative
- cost of maintenance, repair and part of the interest for single-family homes (KELA, 2015l)

Maintenance allowance

Maintenance allowance can be paid by Kela, if parents are separated and the child does not receive maintenance form the parent that has maintenance responsibilities. This support can be claimed only if parents have signed a child maintenance agreement and municipal social welfare office had confirmed it, or there is a court decision on child support. In case the child was born out of wedlock and the paternity

has not been confirmed or the child has been adopted by single parent, previous condition does not apply (KELA, 2015m).

Child maintenance allowance can be claimed also when:

- the parent liable[21] for maintenance has not paid the confirmed child support.[22]
- the amount of confirmed child support is lower than the child maintenance allowance due to the financial situation of the parent liable for maintenance.[23]
- no child support has been confirmed to be paid due to the financial situation of the parent liable for maintenance. (KELA, 2015m)

Allowance is paid to person looking after the child. It can be also paid to the child once he or she reaches 15 years of age. The allowance is payable until the child reaches 18 years of age. It will not be paid in case that the child has over period of 6 months income exceeding set limit. The limit is € 1 084 per month if the child is living on its own otherwise its € 758.80. Kela will also not pay the allowance if the liable parent has died. (KELA, 2015n)

The child maintenance allowance is **not subjected to the income tax** and its full amount **is € 155.17** per month. (KELA, 2015n)

3.2. Family-based tax relieves

Some of the tax relieves are deducted automatically by the Tax Administration if the conditions are fulfilled bud some have to be claimed. Below are described in more detail those which are family-based.

Tax credit for child maintenance

It is a deduction for parents who are liable for maintenance. It is not deducted automatically but has to be claimed by taxpayers themselves. It can be claimed for each child[24] aged under 18 up to maximum € 80 per year or up to 1/8 of the maintenance expense - whichever is lower (Finnish Tax Administration, 2014).

[21] Liable parent is a parent liable to pay child support under a child support agreement of court decision.

[22] Kela pays the amount of maintenance allowance and collects the full amount of child support afterwards. If the child support is higher than paid allowance the difference is paid off after the full amount has been collected.

[23] In this case Kela pays only the difference of child maintenance allowance and confirmed child support. The minimum payable amount of allowance is 5 euros.

Child tax credit

This tax credit on the other hand is accounted for automatically for those who are entitled. Right to receive child tax credit have all people who have children in their care and custody. Amount deducted is at maximum € 50 per year per child for parents with joint custody and with net taxable income below € 36 000 per year. The amount is increased up to € 100 per year per child for a parent who has single custody. Deduction cannot be claimed for more than four children and it is reduced is the net taxable income exceeds € 36 000 in a manner that one percent from the exceeding part is subtracted from the calculated tax credit (Finnish Tax Administration, 2015).

3.3 Services provided to families with children

Apart from the broad system of direct financial support there are also several types of services for families with children. These services are to support families is many different ways so in addition to those aforementioned they include also preschool education with special teaching for children with learning difficulties or municipal maternity and child health clinics to help secure child welfare (MSAH, 2014).

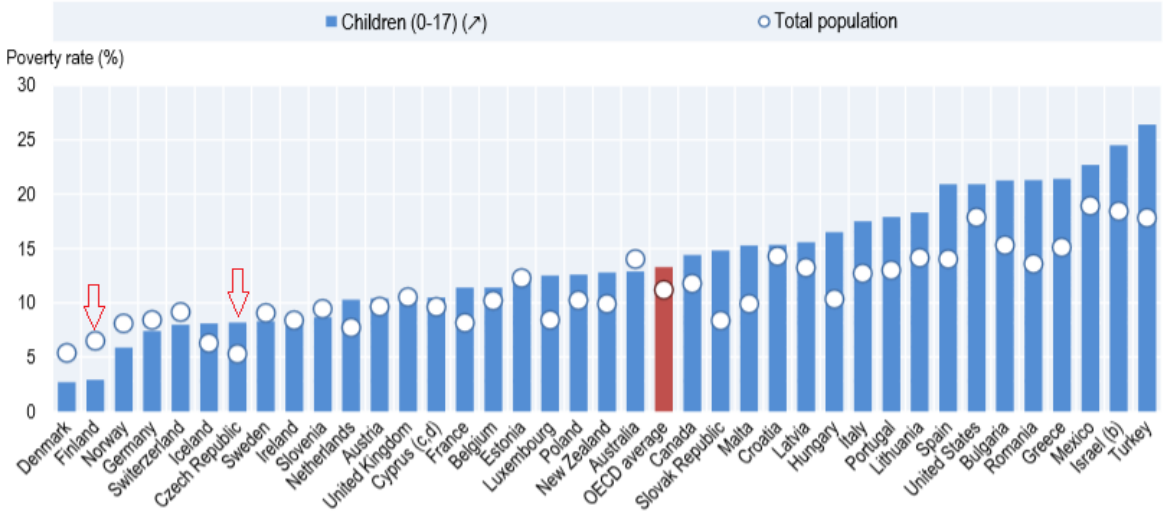
[24] That the maintenance is paid for.

4. SYNOPSIS AND COMPARISON ANALYSIS OF THE CZECH AND FINNISH FAMILY POLICY

In about last 10 years the family policy in the Czech Republic has been shifting from wider range of mostly universal benefits to the system with more means-tested benefits and stronger support through tax reliefs. All that with more focus on low income families and employed parents. On the contrary in Finland almost all tax reliefs for families with children were abolished nearly 40 years ago and the focus is more on universal benefits, services and means to reconcile work and family life. This also means that benefits are tied to shorter periods and in most cases can be also drawn partially along with income from employment.

Finland has significantly lower rate of child poverty than the Czech Republic in a long run. Last large comparison report shows figures from 2010, when in the Czech Republic poverty among children was 9% and in Finland only 3.9% (OECD Family Database, 2014, p.4). Data from 2012 again confirm that Finland has significantly better results in terms of child poverty even though European lowest poverty rate in terms of the whole population is in the Czech Republic, which is observable in the chart below[25] (OECD Family Database, 2015).

Chart 4.1 Child income poverty rates, 2012



Source: OECD Family Database, 2015

[25] This report does not include exact rates but only comparison charts like the one presented here.

In 2012 expenditures on financial support for children and families added up to 3.4% of Finnish GDP (European Platform for Investing in Children, 2015), while in the Czech Republic it was only 1.1% and EU average was 2.2% (European Platform for Investing in Children, 2014).

Table 4.1 below shows the proportion of family households and family households with children in total number of households[26] in both countries in 2013.[27] The category "Families" represents family households including married couples without children. This category is relevant for example for tax relief for spouse applicable in the Czech Republic. But if we want to look at number of potential users of state social support provided in a form of benefits, we should focus on the proportion of families with children in total number of households, which is slightly higher in CR (0.33%) even though in Finland higher percentage of families has children (0.50%).

Tab. 4.1 Families with children in 2013 - % share in the total number of households

Country	Households total	Families		Families with children		
		total	as % of households	total	as % of families	as % of households
Czech Republic	4 304 496	3 062 871	0.71	1 420 134	0.46	0.33
Finland	2 599 613	1 471 085	0.57	735 143	0.50	0.28

Source: Self processed from CZSO and Statistics Finland data, 2014,2015

Following table 4.2 briefly summarizes the two previous subsections and also shows the possible equivalents of individual family policy instruments. The instruments are listed chronologically if possible and compared in terms of their main purpose and setting. While some of the Czech instruments have nearly perfect equivalent in Finnish system, there are also some that have no equivalent at all (dark blue) or are difficult to match (light blue) with their equivalent. Since detailed information about individual instruments can be found in previous chapters, short description in the table contains only the main characteristics relevant for the comparison.

[26] Definition of household complies with definition accepted by Eurostat and EU countries, therefore it referes to a group of persons living together and sharing basic expenditures such as food, housing costs, etc. (OECD, 2002) This definition is utilized also by the Czech Statistical Office. (CZSO, 2015b)

[27] Data for 2013 as obtained during survays in 2014 are the latest available that can be used for comparison.

Tab. 4.2 Comparison of instruments of the Czech and Finnish family policy

Czech Republic		Republic of Finland	
Instrument	**Short description**	**Instrument**	**Short description**
Pregnancy and maternity compensation benefit	compensates loss of income due to pregnancy before maternity period	Special maternity allowance	compensates loss of income of pregnant woman unable to work due to health hazards in her work
Maternity benefit	support period is 28 weeks, starts before expected date of birth	Maternity allowance	50 to 30 days before estimated delivery
Birth grant	one time contribution, when a child is born	Maternity grant	one time contribution to expectant mothers
Parental allowance	monthly, up to amount of CZK 220 000 and after birth, until the child's 4th birthday	Paternity allowance, Parental allowance	after birth and until the child reaches 2 years of age
		Child home care allowance	until the child reaches 3 years of age
		Flexible care allowance	until the child reaches 3 years of age if parents work no more than 30 hours a week
no equivalent	*no equivalent*	Partial care allowance	child attending the first and second year of school
no equivalent	*no equivalent*	Maintenance allowance	if parents are separated and liable parent does not pay maintenance
Family member care	no more than 9 calendar days, to allow parent to take care of seriously ill child*	Special care allowance	up to 60 workdays, to allow parent to take care of seriously ill child
Child allowance	paid to dependent child under age of 26, who fulfills the conditions	Child allowance	dependent child under age of 17, who fulfills the conditions
Housing allowance	paid if 30% of family income is insufficient to cover housing costs	Housing allowance	designed for low-income households

Czech Republic		Republic of Finland	
Instrument	**Short description**	**Instrument**	**Short description**
Funeral grant	one time contribution for funeral of dependent child or parent of dependent child	*no equivalent*	*no equivalent*
Child tax benefit	from CZK 100 to CZK 13 404 per year, for each child in the household	Child tax credit	people, who have children in their care/custody and their income is below certain limit, € 50-100 per year per child
no equivalent	*no equivalent*	Tax credit for child maintenance	claimed by parents liable for maintenance - € 80 or 1/8 of the maintenance expense, whichever is lower
Preschool childcare facility cost deduction	deduction up to CZK 8 500 per year, equal to verifiable costs	*no equivalent*	*no equivalent*
The tax relief for a spouse	up to CZK 24 840 per year, for a spouse living with the tax-payer in common household	*no equivalent*	*no equivalent*

Source: Personally processed from the information aforementioned

**Under certain circumstances mentioned in the text above*

Benefits and allowances in the period preceding childbirth and birth grants are in both systems designed in a very similar manner so they compensate potential loss of income due to pregnancy and provide the necessary financial support to start a family. We can find most of the differences in setting of benefits associated with the period up to child's two/three years of age and during the first years of school attendance. In the Czech Republic the monthly amount of parental allowance can be adjusted individually by the entitled parents so it covers the period up to child's fourth year of age. The same period is in Finland covered by three different instruments and the setting coincides with the strong emphasis on reconciling work and family life.

Moreover Finnish family policy system offers financial help to families also during first years of school attendance via partial care allowance, which in the Czech system does not have equivalent, even though that latest adjustments of the system brought new instrument, preschool childcare facility cost deduction.

It is a tax relief not a financial transfer and it is designed to ameliorate financial situation of families with children during their attendance in preschool day care facility.

Kela also temporarily substitutes for parent liable to pay maintenance so the parent caring for a child/children does not experience unanticipated lack of funds that could endanger functioning of the family. This option was in the Czech Republic already considered several times in different forms, but so far those against outweighed those for. However, it was brought up again last year (2014) by the Czech Minister of Labour, Mgr. Michaela Marksová, who suggests a similar concept, when state should help parents who are entitled to maintenance payments but the other party is unable or reluctant to pay them out. Subject again triggered a great discussion with arguments on both sides so the future development in this matter is still not certain (FinExpert.cz, 2015).

Family member care, child allowance and housing allowance have virtually the same setting and purpose in both systems. On the other hand setting of indirect support provided via tax deductions shows the differences in the approach. In the Czech Republic the tax reliefs were seen as a way to lower direct expenditures on financial support to families with children and to support working parents or ease their return to the labor market. And the tax relief for a spouse also reflects the need to show support to married couples. In Finland we can find only two family based tax deductions one of which is simple child tax credit and the other is deduction for child maintenance claimed by parents liable for maintenance, which is a bit specific and unusual target group in terms of family policy.

5. MICROSIMULATION MODELING

Because in this work I intend to use microsimulation modeling to deepen the comparison of two national family policy systems and inter alia discuss the role of microsimulation in family policy development, certain information base about this method will be provided in following subchapters. The first subchapter defines microsimulation as a method and states its main characteristics. This section is important for understanding why does the microsimulation deserve attention and what is its main contribution in politics. Brief introduction into the development and application is included to demonstrate the growing importance of this approach. Description of various stages of the process, types of models, advantages and disadvantages of this method and their description will follow respectively. The development and important features are illustrated through several examples of microsimulation models. To show how the method is utilized in both countries of interest here the sixth subchapter contains description of previous and current microsimulation practice. After this set of general information there is also a closer look at the method used for purposes of this thesis.

5.1 Definition and main characteristics

Microsimulation modeling is a technique developed to **analyze the effects of changes in policy on micro-units** such as persons, firms, households, families or other. In terms of family policy it has significant meaning for political decision-making because it enables simulation of distributional impact of policy changes to tax and financial transfer programs. It can be considered as forecasting tool because it can be used to answer "what if" questions.

"But the approach often can be too cumbersome, costly and time consuming for real-time policy analysis." (BOURGUIGNON, SPADARO, 2006,p.2)

At the same time we always have to bear in mind that purpose of every model is to reduce reality to its essential elements and therefore also the interpretation of outcomes have to be pursued carefully with attention to the main purpose of the model (CARO et. al., 2012).

Microsimulation modeling is transferring social, economic and political parameters of certain population into system of algorithms in statistical program, using data available on individual level. Changes in the system can be then analyzed at the micro-level or aggregated to show the overall effect on society as a whole. This design is extremely complex and data demanding, which means that lack of data, equipment or crucial knowledge may limit its usage greatly (BOURGUIGNON, SPADARO, 2006, p.3-4).

5.2 Development and application of the method

The very first idea of microsimulation modeling emerged in 1960s from Guy Orcutt's work, when he emphasized the insufficiency of aggregate models and need for prediction of distributions on individuals, households, etc. (ORCUTT, 1957). Progress was initially hindered by computer technology and data constraints, but then computer technology development during 1980s brought new possibilities for microsimulation and speeded up its expansion. The sophistication of the models is increasing and also their application broadens thenceforth (BOURGUIGNON, SPADARO, 2006, p.3-4).

The method was also at the beginning adopted mainly by countries that had suitable micro-data at their disposal and wanted to reform their tax or social system. Nowadays microsimulation models are widespread and usually constructed by government institutions[28] and academic research centers. This method is being used in many different areas of research such as health economic assessment, social policy simulation, traffic simulation, etc.

Models have advanced from basic static tax-benefit calculator to more ambitious dynamic models, which incorporate also simulation of the time motion influence on population characteristics. Further development led to behavioral models which attempt to build in changes in behavior of individuals as the policy is modified (WILLIAMSON, ZAIDI, HARDING, 2009).

Data are collected either locally, at national level or even at international level, depending on type and purpose of the model. At its beginning the microsimulation was dependent on national surveys and international comparison was very limited due to lack of compatible data. Especially for public policy purposes more detailed surveys on income and living conditions were needed. As formation of European Union brought need for more profound coordination of national policies, enhancement in census data collection and processing was needed. European Community Household Panel (hereafter ECHP) was introduced in 1994 to cover wide range of microdata characteristics in 15 European countries. ECHP was cross-national longitudinal panel survey which gathered information about income, health, education, housing, demographics and employment of individuals above age of 16. It was active from 1994 to 2001 in annual waves. ECHP was in 2003 replaced by European Union statistics on income and living conditions (hereafter EU-SILC) which is more focused on fight against poverty and social exclusion in the EU. (EUROSTAT, 2015) One of the main goals was to obtain data-source for reliable comparisons

[28] In most cases national bureau of statistics

between member states. In addition to previous composition of survey, EU-SILC focuses on more detailed information about income situation (EUROSTAT, 2015b). Because of its substantial role in monitoring and melioration of information base for decision making on EU level, EU-SILC is compulsory for all member states. Common implementation recommendations, requirements, concepts and classifications were established in order to ensure comparability. EU-SILC provides cross-sectional and longitudinal data at household and individual level and variables are divided to primary that are collected every year and secondary collected every five years. While primary variables cover basic information about households/individuals and their income, housing, social exclusion, labour information, health, etc., secondary variables are grouped by specific topic such as Intergenerational transmission of disadvantages in 2011 or Well-being in 2013 (EUROSTAT, 2015c). Thereby EU-SILC brought innumerable possibilities into the area of microsimulation and cross-country comparison.

5.3 Main benefits and challenges of microsimulation

It is clear that development of microsimulation modeling brought countless opportunities and updates. The ability to comprehend the complexity, heterogeneity and change in society is significant step forward and it enables better understanding of social processes along with acquisition of valuable insights that support well-informed political decision making. It provides information and describes relationships which would not be obtainable by any other method. Heterogeneous information from manifold sources can be combined to a cohesive whole in pursue of more detailed variables and accurate outputs. Another convenient feature is the possibility to run experiments and if-scenarios. Moreover it is a new tool for international comparisons and policy impacts analysis. And a situation of a certain subgroup can be analyzed without removing the context of the entire population.

But apart from various innovations and benefits also significant problems and complications can be associated with this method. Construction and maintenance of a microsimulation model is rather costly and time-consuming. Its complexity also means that it is extremely data demanding and finding and combining appropriate data sources[29] is still challenging. Development and possibilities are fairly reliant on information technology development and accessibility which initially hindered the progression and in some cases can be a problem even nowadays. Also constantly changing regulation and demographic situation makes it immensely difficult to construct and maintain the model, therefore even initially well designed models can lose their flexibility and ease of use. Some microsimulation projects tend to be too

[29] especially in terms of coverage, reliability and detail

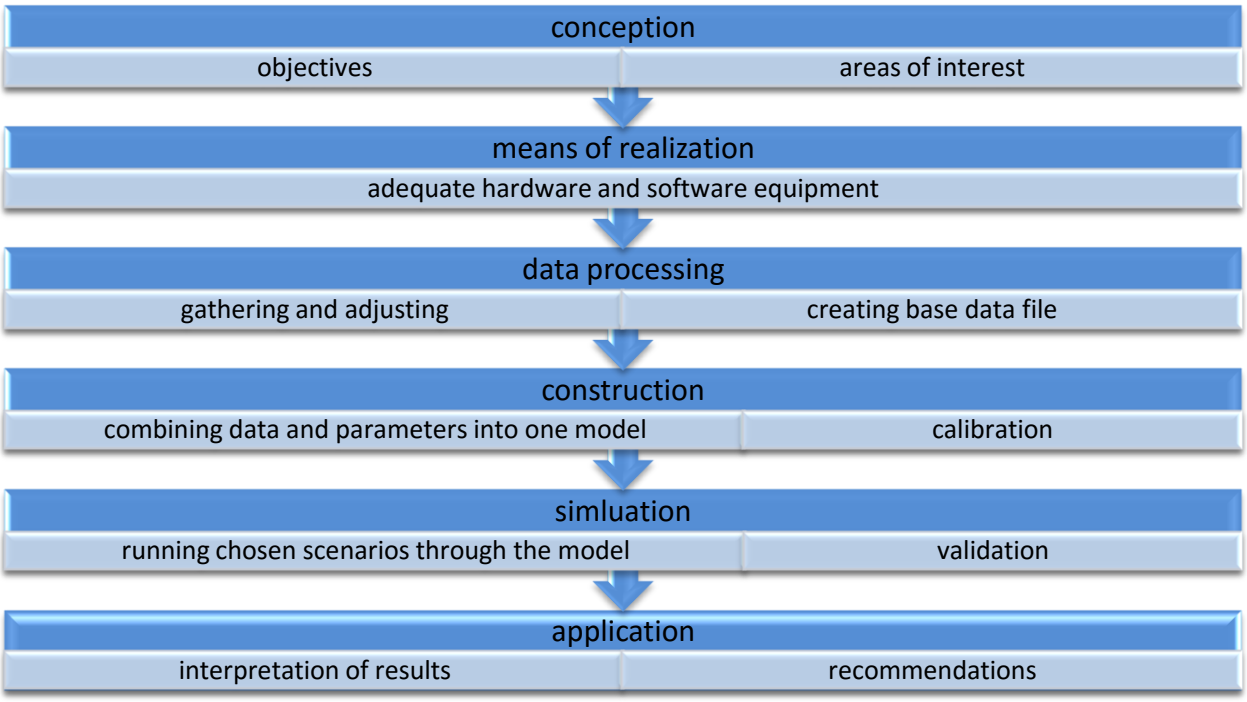
ambitious so the attention is diverted from the essentials such as proper detailed documentation, involvement of users in the process of creation, and so on.[30] In spite of the complexity and detail not even these models can incorporate interactions between individuals, motivations, intentions or tax evasion and non-take ups of benefits to the fullest so they still in certain way simplify reality and have to be interpreted with respect to that (CASSELLS, HARDING, KELLY, 2006).

General conclusion is that even though we can agree that microsimulation modeling is very useful modern tool of economic and political analysis we also have to bear in mind that it has limitations and there are still challenges to be faced and it must be used with caution.

5.4 Stages of the process

As already mentioned above, the process of microsimulation is very complex, hence it might be very helpful to point out the most important stages. Following chart provides one of many possible ways to structure the process of microsimulation.

Chart 6.1 Stages of microsimulation



Source: self-processed, inspired by Caro, et al., 2012

[30] As an example can be mentioned initial failure of DYNAMOD. (CASSELLS, HARDING, KELLY, 2006)

At the very beginning the formulation of conception includes initial reasoning and formulation of objectives and questions, which microsimulation could help to answer, and also specification of areas of interest. Deciding upon means of realization is in other word choosing adequate computer equipment and methods that can be used. Data processing is crucial part of choosing and assessing sources of data and adjusting their raw form for the purposes of microsimulation. Initial stage of model construction is careful combining the data and parameters of the population and system of interest into one model, which also means deciding which variables should be excluded due to lack of data, etc. Calibration is necessary in order to ensure that the model reflects the reality as accurately as possible. When the base model is finalized alternative scenarios can be incorporated in order to simulate the changes they would bring. As a part of simulation there should be also validation in terms of analytical reasoning to avoid "human factor" errors. In the last stage of application results should be summarized and interpreted so recommendations about simulated changes can follow.

5.5 Typology of models and the most important examples

Microsimulation models can be divided to several categories based on their characteristics. Main distinguishing features include complexity, size, type of variables, time frame, etc. for example Brown and Harding (2006) distinguish following types of simulation models:

Simple	Complex
Small	Large
Quantitative	Qualitative
Static	Dynamic
Deterministic (rule-based)	Stochastic (probabilistic)
Non-behavioral	Behavioral
Non-spatial (national)	Spatial (regional)
Closed	Opened

Whether the model is **simple** or **complex** depends on data requirements and difficulty of construction. In terms of microsimulation the vast majority of models are complex. **Small** model usually works with limited range of units and does not attempt to cover all the characteristics of the population. **Large** model

is more complex, population-based, demanding large dataset and exhaustive range of information. **Quantitative** model is working with measurable variables processed mathematically(statistically) on the other hand **qualitative** models incorporate variables describing non-measurable normative properties. **Static** models focus on simulation at certain point or points in time and do not attempt to project changes caused by the flow of time as **dynamic** models do. When the model is **deterministic**, it consists of a set of rules determining whether the conditions triggering certain action were met or not. **Stochastic** model on the other hand operates on the basis of probabilities of certain phenomena occurring. Most of the models do not incorporate changes in behavior of individuals caused by the changes in policy setting, therefore they are **non-behavioral**. **Behavioral** models try to bring the simulation closer to reality by taking into account also changes in individual behavior. **Non-spatial** model provides simulation at national level without distinguishing between different regions, but in recent years also **spatial** models are being developed in order to determine local impacts of policy changes (BROWN, HARDING, 2002, p.7-10). Depending on the relationship between simulation process and individual units in population can the model be either closed or opened. If events and calculations are only happening between those individuals included in the model and no others are considered (foreigners, etc.) than the model is "**closed**". On the other hand "**opened**" model takes into account also individuals not included in its base population. Therefore opened models are more flexible but also less comprehensible (CASSELLS, HARDING, KELLY, 2006).

Currently there are already dozens of microsimulation models all over the world combining different variations of features discussed above. Moreover some of them can be focused for example on pensions systems, some on redistribution, health care system, etc. Therefore elaborating examples for each possible subgroup would be too cumbersome and of no use for purposes of this thesis. That is why below will be listed only a few examples of models that are already at the advanced stage of development and represent not only the very formation of microsimulation but also current trends. Because the method was first developed in US, two of the models chosen to describe in more detail are TRIM and DYNASIM which represent the very first successful attempts to build complex microsimulation models for purposes of political analysis and forecasting. Another well known example is EUROMOD which is unique in many aspects and has high importance in European context. The Czech and Finnish models will be described separately in the following part of this subchapter.

TRIM is the Transfer Income Model which originated from the very first US microsimulation model RIM (Reforms in Income Maintenance). It covers simulation of tax, transfer and health programs in the United States so it can be used for better understanding of changes in public policy and their impacts at individual, family, state and national level. It was introduced in 1973 and since then apart from annual

adjustments also several versions were developed in order to keep the model up to date - the latest is called TRIM3. It is a static model managed by the Urban Institute. Underlying data are March Current Population Survey (CPS) data collected by Census Bureau and Bureau of Labor Statistics (TRIM3 project website, 2015).

DYNASIM is dynamic microsimulation model also developed in the United States by the Urban Institute during 1970s as the first attempts to build dynamic simulation model of the socioeconomic aspects of population. In 1975 the first version was completed. It was created for policy analysis purposes but also as forecasting and social science research tool with its own simulation software (MASH). It included three submodels for different sections - family and earnings, jobs and benefits, cross-section imputation. During 1980s update called DYNASIM II. was introduced and it focused mainly on simulation of pensions. Latest version DYNASIM III. is even broader and allows to simulate demographic and economic scenarios such as future income distributions, labour force participation, pensions, benefits, health status, etc. Its basefile is created from Survey of Income and Program Participation panels. DYNASIM III. also includes behavioural equations (FAVREAULT, SMITH, 2004).

EUROMOD is large static model designed for purposes of the European Union policy simulations. It incorporates datasets of several countries so it can be used for cross-country comparisons. It is a tool of high importance in terms of tax-benefit policy analysis. EUROMOD is managed by a group of researches called The Microsimulation Unit directed by Professor Holly Sutherland (University of Essex) in collaboration with national experts. Its creation started in 1998 with aim of covering all 15 Member States of the European Union. Desired and emphasized characteristics are transparency, flexibility, adaptability, consistency and comparability across countries. Nowadays EUROMOD includes datasets of 27 EU countries and allows microsimulation in years 2007-2013. (EUROMOD, 2015) New module for Croatia should be also included soon, as it is being developed since 2013 and microsimulation analysis is supposed to be done in the second half of 2015 (MASTELA-BUŽAN, URBAN, 2014). EUROMOD is working with EU-SILC micro data issued by Eurostat in some cases complemented with data from national statistics in pursuit of more detailed variables. Apart from applications at national and international level it also provides starting base for construction of microsimulation models for countries outside the Europe such as SAMOD or RUSMOD. Is it also used as a tool for monitoring the progress towards EU targets (SUTHERLAND, FIGARI, 2013).

5.7 Practice in the Czech Republic and Finland

In the **Czech Republic** microsimulation is in its initial phase. Most of the models in use are macroeconomic as for example forecasting model of Czech National Bank (CNB) or model managed by Ministry of Finance called **HUBERT** which is DSGE[31] model describing behavior of households, firms and government as agents in the economy (ŠTORK, ZÁVACKÁ, VÁVRA, 2009). **Dynamic microsimulation model of pension system** was created in 2011 by Deloitte Advisory Sp. z o. o. Deloitte worked on the project under a contract with the MLSA. The project was co-financed by European union program aimed at development of data base and modeling techniques. It simulates lifelong scenario for each individual in dataset and it is able to take into account different life stages (birth of child, marriage, etc.) so the pension calculation is fairly accurate. Is utilizes data from the database of Czech Social Security Administration complemented with data from Population and Housing Census and Labour Statistics of Czech Statistical Office (DELOITTE, 2011). Another microsimulation model was developed by the Czech Academy of Sciences and it is called **DANE**. It is designed for impact evaluation of changes in indirect taxes system on household and the government budget. It also uses data of Czech Statistical Office (hereinafter CZSO) specifically Household budget survey. Via incorporation of elasticity estimates[32] it also simulates responses of consumers to changes in tax system., which is considered as the most important feature of this model (JÁNSKÝ, 2013). And there is also model **MIMOD** with aim of determining how taxes and benefits in the Czech Republic influence motivation to work. It is operating at household level (GALUŠČÁK, PAVEL, 2006). In 2013 were released two new microsimulation models created by Center for Economic Research and Graduate Education - Economics Institute (CERGE-EI) for the Ministry of Finance. **TAXBEN** is a model focused on impacts of changes in system of direct taxes and social benefits. Second model is called **QUAIDS** and it simulates changes in value added tax and its impacts (CERGE-EI, 2015). Apart from national models also **EUROMOD** is utilized for analyzes and comparisons.

Finland has developed several microsimulation models with divers purposes. Majority of the models constructed so far are static. For example **JUTTA** is static model designed for tax and social benefit simulations. It is managed by Social Insurance Institution of Finland and apart from one main model it also has ten sub-models to run simulations also separately for individual branches of legislation (ZHOU, 2013). Another static tax-benefit model is **SOMA** which is used by the Ministry of Social Affairs and

[31] Dynamic Stochastic General Equilibrium (DSGE)

[32] For these estimates the Quadratic Almost Ideal Demand System (QUAIDS) is used.

Health (SALLILA, 2010). **EUROMOD** used as a base for simulation of Finnish tax-benefit system model named TUJA which was developed by Ministry of Finance in 1980s and worked with Income Distribution Survey data collected by national bureau Statistics Finland. In terms of data, **TUJA** had a very good coverage. It was used frequently for both small and also major policy reforms such as total tax reform in 1989-91 or for the formulation of family social security structure in 1991 (DECOSTER et al., 2008). However Statistics Finland developed new modern model called SISU. **SISU** is being developed since 2011 with aim to create model with improved usability and accuracy. It replaced TUJA and consists of main model and 12 sub-models similarly as JUTTA (Statistics Finland, 2015). To describe pension system development the **ELSI** model is used. It was developed by Finnish Centre for Pensions and it is dynamic model able to simulate future pensions during 2008-2060 period with focus on pensions distribution and replacement rates (TIKANMAKI, SIHVONEN, SALONEN, 2014).

5.8 Method used for purposes of this thesis

In this thesis microsimulation should serve the purpose of comparison between Czech and Finnish family policy and obtaining more information about child poverty rates and measures in family policy that help to battle child poverty in both countries. More specifically it will help to compare chosen instruments from both systems that have similar purpose but different setting. Via the simulation of changes in the setting of an instrument it shall be determined whether we can draw inspiration from the Finnish practices in order to alter the current setting so the child poverty rate decreases. Three scenarios were **intended** to be simulated and compared to the baseline,

1) the Finnish setting applied in the Czech conditions

2) the Czech design employed in the Finnish system

3) an alternative setting combining features of instruments that can help address the problem in question.

But the simulation is greatly restricted by the structure of data, which for the Finnish part means that due to lack of information the model cannot be created and ran in the Finnish conditions and focus has to be diverted to the Czech dataset and simulations in the Czech conditions. This means that following scenarios **are tested** to achieve the objective

1) Czech model in comparison to current development and setting

2) the Finnish instrument/s simulated in the Czech conditions

3) an alternative setting combining features from both systems tested on the Czech dataset

Also the impact on state budget should not be omitted because no changes can be suggested without considering their costs and the overall impact on the whole policy system. This means that the model and its outputs will be focused on income situation of families with children and total costs of family policy namely instruments discussed herein. The instrument should be one that has a significant impact on the financial situation of families with children. For the Czech Republic the parental allowance is chosen to be tested not only because its aim is to support families with children during early childhood but it also represents significant portion of all expenditures on state financial family support[33] (MLSA, 2015c). The Czech parental allowance covers the period up to the child´s fourth year of age so when looking for Finnish equivalent we have to consider parental allowance and paternal allowance but also child home care allowance and flexible care allowance as showed in chapter 4.

The model will have characteristics in accordance with its purpose and scope of this thesis. It will be simple, small, static, quantitative, deterministic, non-behavioral, non-spatial and closed. Basefile will be created from EU-SILC database covering relevant and comparable data from both countries. The latest data available are those of interest, which means the survey from 2013. Data structure and characteristics, software and methods used for microsimulation will be described in more detail in following chapters.

[33] Approximately 50% of the total annual expenditures on benefits for families with children (MLSA, 2015c).

6. DATASET

This chapter is dedicated to more detailed description of underlying data used for microsimulation and to the creation of the dataset. Data source should be chosen with respect to the task at hand which means that it should provide comparable microdata covering information about composition of households (families with children) and their income situation (earnings, pensions, benefits, etc.) in both countries. Main characteristics of the data source, design, sample characteristics and general definitions utilized in the dataset will be also provided in this section as a base for further work. As integral parts of this chapter are also included the data adjustments enumeration, the baseline analysis for both countries and the validation of data.

6.1 General description of data source

In comparison to searching through databases of national statistics bureaus in both countries the international European database EU-SILC offers rather easier access to complex dataset with **integrated design** which is also constructed with high emphasis on comparability. As already mentioned in previous chapter EU-SILC database was created with aim to provide reliable source of data for recurring international comparison, analyzes and reports on income distribution, poverty and social exclusion throughout Europe. Database contains **cross-sectional and also longitudinal** data, which are both produced annually. *The reference population of EU-SILC is all private households and their current members residing in the territory of the MS*[34] *at the time of data collection.*(EUROSTAT,2013, p. 12) The implementation of EU-SILC is obligatory for all member states of EU. There are common guidelines and requirements for the implementation of this survey and for the production of national datasets. But the member states are also encouraged to utilize existing sources of data to ensure that the design is flexible, cost effective and efficient. Among the tools pursuing harmonization is also the list of target variables that are divided into primary and secondary depending on how frequently are they collected.[35] Furthermore variables are collected at household and individual level. These and many other features make EU-SILC the most suitable data source for the purposes of microsimulation in this thesis.

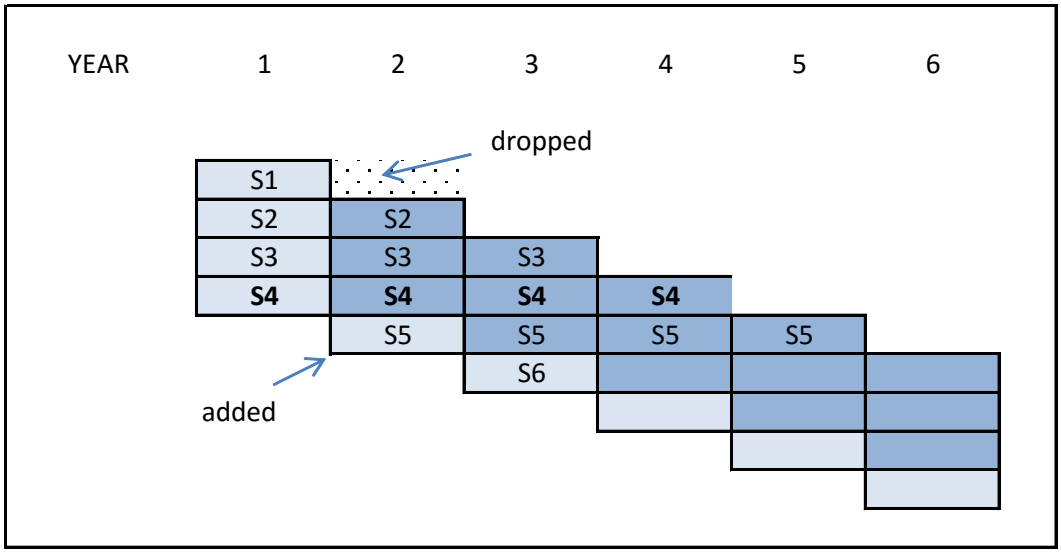
[34] Member State

[35] The primary variables are collected annually while secondary variables are collected less frequently depending on ad-hoc modules.

6.2 Design of EU-SILC

One of the valued properties of EU-SILC is its flexibility in the sample design. The member states can use existing surveys and registers or their combinations adjusted in accordance with common framework of EU-SILC. In case a new survey is needed/preferred in order to meet the requirements, an integrated design is recommended by Eurostat. Within the integrated design the combination of independent samples and long-term panel is to be utilized for obtaining cross-sectional and longitudinal data. For annual cross-sectional estimates independent samples and fixed long-term panel are two extremes, each of which has its advantages and disadvantages. Therefore combining both can help alleviate some of the drawbacks. This approach is also referred to as a **rotational design**, because it is based on partial rotation of the sample. Due to a need to allow for computation of the *"Social Inclusion Indicator at the persistent-risk-of poverty rate"*(Eurostat, 2014, p. 45) duration of the panel for longitudinal data should be at least four years. This means that the optimal structure for the rotational design is formed by four sub-samples or four replications, where the rotation is performed in a manner that each year one sub-sample/replication is replaced while the remaining three are kept unchanged. This process is illustrated by the following figure.

Figure 6.1 Rotation pattern from year 1



Source: self-processed, inspired by Methodological guidelines and description of EU-SILC target variables by Eurostat, 2014, p. 18-21

As figure 6.1 shows four sub-samples[36] are drawn for the first year herein marked as S1,S2,S3,S4. Each of the sub-samples must be representative of the target population. One of them (S1) is purely cross-sectional, which means that it is dropped for the next year and replaced by a new sub-sample (S5). Starting from S4 each sub-sample is kept for four years for the purposes of longitudinal component. This method is used for the production of data for EU-SILC in the Czech Republic (CZSO, 2015c) and in Finland as well (JÄNTTI, TÖRMÄLEHTO, MARLIER, 2013, p. 83).

6.3 Sample and survey units

The selection of the sample is subject to several rules that were set out by the Commission Regulation. The sample should be drawn as **nationally representative probability sample**. For this sample are eligible all private **households** and all **persons** residing within those households. On the other hand persons living in collective households or institutions are not considered a part of the target population. For the purposes of the survey is collected information about a private household (size, composition and basic data about current members) and about persons aged 16+ (labour, health, income situation, etc) (Commission Regulation (EC) No 1177/2003, Article 7, 8). The regulation also includes a breakdown of minimum sample sizes for individual countries[37] in order to ensure statistical, practical, precision and other requirements in terms of cross-sectional and also longitudinal data again at household and individual level (REGULATION (EC) No 1553/2005, Annex II). Member states use registers, personal interviews or their combination to collect the data. Based on the chosen method/source the sample is either stratified or just randomized. Stratified sample is created by dividing population into subgroups on the basis of relevant characteristics[38] and then randomly sampling from each stratum (subgroup) in order to achieve as good reproduction of the population as possible. This method may require advanced knowledge about population characteristics. The Czech Republic is among countries that use multi-stage stratified sampling whereas in Finland the one-stage stratified sampling is utilized (EUROSTAT, 2015d).

[36] Sub-samples may also be referred to as replications or rotation groups.

[37] The figures concerning the Czech Republic are included since the amendment of the regulation in 2005.

[38] Mostly geographical strata are used, but they could be also based on type of household, est.

6.4 Base file data adjustments, baseline analysis and validation

Base file data adjustments

Variables that were used for the research herein were slightly adjusted in order to make it easier to work with them in the model as well as in the baseline analysis. Part of the changes lies in the creation of labels because variables are identified by Czech marks/shortcuts (in the Czech dataset) or by general EU-SILC shortcuts (in the Finnish dataset) which often do not completely reveal character of the variable. This is due to the fact that access to the database was mediated by the Faculty of Economics and Administration of Masaryk University in the Czech Republic, which purchases it for scientific purposes. Therefore Czech data are as the Czech statistical office provides them - slightly adjusted, more detailed and labeled in Czech. Finnish dataset on the other hand has the unified form and unified labels typical for EU-SILC data. It is not necessary to describe these changes in more detail. As an example only two of derived variables/modifications that facilitate the examination of the situation of families with children are presented below.

To easily distinguish households with children from those who are childless a new variable was created in both datasets and named Child. While in the Czech dataset this can be done via variable covering number of children in the household, there is no such variable in the Finnish data, so it had to be derived from household type information. Similarly entitlement to parental allowances can be directly obtained only in the Czech data but for Finland it could be only partially determined from the aggregate variable on family/children allowances and computation of number of children aged under 17, which is very inaccurate because parental allowances can be drawn only until the youngest child reaches four years of age.[39]

Baseline analysis and validation

In this section the baseline situation will be analyzed in terms of households with children in both countries. All herein described indicators were obtained on the basis of the adjusted dataset as outlined above which means that they relate to 2013 and they can differ from figures provided by national statistical offices as discussed in following chapter. Most of the indicators will be re-examined after each simulation in order to evaluate the impact of simulated changes in policy.

[39] Age of the children younger under 17 years is not observable in the Finnish dataset.

Firstly by looking at frequencies of the variable Child in the table 6.1 below we can see that 33.4% of households in the Czech Republic have at least one dependent child.[40] This means that as the target population of family policy can be considered roughly one-third of the whole population. Variable Child created for Finnish data shows that there is 25.1% of households that have child/ren. These figures are broadly equivalent to those provided in chapter 4, which means that the dataset describes population quite accurately. The three percent difference in Finnish portions of households/families with children can be explained by the fact that in dataset household with children can include one or more families while the percentage provided in synopsis above is based on number of families.

Tab. 6.1 Households with children

Children	The Czech Republic		The Republic of Finland	
	frequency	percent	frequency	percent
no	2 854 068	66.60	1 942 523	74.90
yes	1 428 431	33.40	652 477	25.10
Total	4 282 499	100.00	2 594 999	100.00

Source: self-processed, based on adjusted EU-SILC 2013 dataset

Since the instrument of interest here is the parental allowance, even more narrowly defined subgroup of households with children should be investigated, i.e. those who are entitled to this financial support. Here using the variable of entitlement to parental allowance helps to determine that there is 6% of households that draw parental allowance which coincides with the fact that there is 6.7% of households that have at least one child at age of 2 years and younger (0-35 months old).[41] As already mentioned in previous subchapter this information is available only for CR due to lack of information in Finnish dataset which is much less detailed. From the perspective of public finance the important indicator is the amount of expenditure on the parental allowance or on the state social support as a whole because we need to see the changes in children poverty rate along with the budgetary implications in order to be able to assess the desirability of suggested changes. By aggregating the amounts of allowances paid out under the state social support system during the reference period we get the total of CZK 29.705 billion out which

[40] As dependent child is considered a person in pre-school age, in elementary school or preparing for future occupation (students up to the age of 25).

[41] With respect to the conditions of drawing the parental allowance this category covers most of the relevant households and the difference of 0.7 p.p. can be explained by inclusion of families that are still entitled to maternity benefit (0-7 months), those who have two children in this age but can draw support for just one, etc.

22.103 billion (74.4%) is a sum of parental allowance alone.[42] In Finnish data family allowances are all included in aggregate variable FamilyChildren related allowance, which means that expenditure on parenthood allowances cannot be observed. Kela statistics show that in 2012 parenthood allowances amounted to € 1 080.9 million.[43] While the sum of variable gross FamilyChildren related allowance is € 3 051 million, which means that parental allowances represent 35.42% out of these expenditures.

Adopting the Eurostat methodology the at risk of poverty (herein also as AROP) threshold is herein computed as 60% of income median determined from annual disposable income per consumption unit acc EU. The amount is CZK 116 092.57. This means that all the households with income per consumption unit lower than this amount are at risk of poverty. For CR frequencies of the variable describing at risk of poverty status show us that 9.2% out of all households in the Czech Republic are at risk of poverty. If we focus only on households with children the percentage is even higher, 9.9%. On the other hand poverty rate among childless households is 9.1%. Finnish data confirm lower child poverty rates in comparison to CR. AROP threshold is € 13 245.36. Considering all households 13.8% are at risk of poverty and 11.9% out of those households are households with children. Among households with children 6.5% are at risk of poverty while among childless households the rate is 16.2%. Finnish data do not provide information about exact number of children in the household and their age so it has to be derived from other variables. Therefore certain inaccuracy is to be expected in figures based on these specifications. After conversion of the figures from the household level to children the poverty rate increases to 10.9% and 6.9% out of all children in CR and Finland respectively. All poverty rates presented above were calculated for dependent children aged below 26 years in accordance with the definition of dependent children in CR. Other definitions of child poverty were also applied and computed in order to validate results obtained from the dataset. Statistics Finland reports the children income poverty rate for dependent children aged under 18 and for 2012 it was 12.4% out of all under 18-year-old children. Applying those conditions the dataset shows poverty rate 11.5%. Statistics by OECD Family Database presented in chapter 4 are calculated for dependent children aged from 0 to 17 and living in households with equivalised disposable income below 50% of the median. By using corresponding setting much lower rates can be obtained for example Finnish data show that within all households endangered by poverty only 2% are those with children, among households with children only 7% are at risk of poverty and income poverty rate for children aged 17 years and under is 5.8%.

[42] Computed as a percentage of national GDP in 2012- 4041.9 billion - parental allowance is 0.55%.

[43] Similarly as in CR this amount computed as percentage of 2012 national GDP represents 0.54%.

7. BUILDING MODELS AND SIMULATIONS

This chapter presents the processes associated with the formation of the models. Therein will be described main mechanisms, encountered drawbacks, calibration and validation of the model as well. For processing data files, construction of models and following simulations the statistical program SPSS was chosen. Three separate subchapters describe work on different scenarios - Czech parental allowance, Finnish parenthood allowances (matching the scope of Czech parental allowance) and adjusted alternative setting that is combining characteristics of instruments from both countries. Each of these subchapters also includes underlying assumptions, main constraints and comparison to the baseline.

7.1 Czech parental allowance

In accordance with the objective the type of the model was above all specified as simple, small and static. That is why within the Czech system only parental allowance is simulated and all the other family benefits are left unchanged. Underlying EU-SILC dataset contains information from 2013 survey that covers household characteristics at the time of survey but for income reference period of 2012/2013. With respect to that a simulation of 2015 setting can be considered as an alternative and a way to observe how does the current development of family policy in terms of parental allowance influence child poverty rate. The simulation provided here could only be conducted thanks to the data structure adjustments made by the Czech Statistical Office, which provides users with dataset that comprises variables/information that cannot be found in unified EU-SILC datasets.

The monthly amount and duration of parental allowance is for parents to decide, there are only upper limits, which are determined on the basis of previous income. The information about income refers to the 12 month period preceding the survey. Therefore for some parents that are already receiving allowance for a year or more, it is not possible to obtain information about the income relevant for the allowance assessment. The assumption of rational choice has been adopted to handle these cases. This means that a parent with lower income takes parental leave and receives parental allowance while a parent with higher income remains employed. The maximum payable amount of the allowance is thus derived from the highest parental income in the family, even if one of the parents' income is recorded as zero. If zero income was recorded for both parents an estimate of probable income is created. These expert estimates are based on MLSA statistics and EU-SILC information on median income with respect to gender, age group and educational level. For a non-family type of household with children these estimates are also used but a specific control for the type of household and parents is added to make sure that the right amounts are taken into account.

After determining decisive income a daily assessment base is calculated in accordance with the procedure described in chapter 2. DAB than serves to assign the maximum amount of allowance that can be drawn. Here again, based on assumption of rational choice, designated family income, number of children and age of the youngest child an amount of allowance is computed for each combination of these indicators.

But for simulation the drawing duration is also very important factor that is not accounted for in the dataset. The period in which the allowance was already drawn and also the period for receiving allowance in the year of simulation is expertly estimated with respect to the age of the youngest child in family. It is also necessary to count in the receipt of maternity allowance which may last up to 7 months, but part of it is drawn before the estimated delivery date. Hence here another assumption is adopted to resolve the matter of duration as accurately as possible - maternity allowance is drawn at maximum amount for maximum of possible duration, when approximately one month is drawn before the estimated date of delivery and the remaining six months after. In case that entitlement to parental allowance for the youngest child directly replaces the entitlement to parental allowance for older child the assumption concerning maternity allowance is that all of the 7 months of it were drawn after the delivery, because before the delivery the income is already secured by parental allowance being paid for the older child.

The related problem is the fact that the age of the youngest child can only be determined with an accuracy of years, not months that are relevant for annual amount of allowance. Therefore a child whose recorded age is 1 may be at the time of the survey 12 to 23 months old and the allowance could be drawn for 6 to 12 months in the preceding 12 months. With respect to all assumptions above the coefficients to establish average length of receipt were calculated. This approach is also based on the premise that births are spread evenly throughout the year. (CZSO, 2011)

Whereas the amount of the allowance may be adjusted in the course of drawdown and simultaneously the support is limited by the total amount of CZK 220 000, monthly amounts are usually lower when the youngest child is three or four years old. This presumption is incorporated in the simulation in a manner that *for example a family where the youngest child is three years old and based on income the maximum possible monthly amount of allowance would be CZK 11 500. Parents are able to draw maximum amount in the beginning of the drawdown, but then choose to lower the amount in order to prolong the drawdown period to stay home with their child longer.*[44] *Therefore the simulation incorporates scenario in which the maximum amount is be received only during first 12 months (up to the 18th month of child's age) and than*

[44] When drawing the amount of CZK 11 500 the overall amount of CZK 220 000 is drawn in 19 months, which meant that child is approximately 24 months old.

it should be lowered in order to prolong the period of drawdown at least until the time of survey (on average 39 months of child's age).

After the incorporation and simulation of all above rules and assumptions the outcomes are randomly checked to ensure that calculated amounts are in accordance with characteristics and economic status of the household. At this stage another factor was added to control for - number of years of employment preceding the parental leave. This way parents with zero years worked are indentified and the parental allowance is calculated in compliance with conditions set for those who were not participating in sickness insurance and assessment base cannot be identified for them. As a significant problem remains the fact that information about those who are taking up maternity allowance is not available. In consequence it is not possible to single out cases when the youngest child is at age 0 and amount of parental allowance (herein also as PA) would be also 0 without basing the simulation on records of actual amount of drawn PA. Number of these cases is 37 443 which is approximately 0.87% out of all households. Similar problem arises when the child reached 3 or 4 years of age and the maximum amount of allowance is CZK 11 500 so the whole amount of CZK 220 000 should be depleted and allowance for this period should be 0. This is the case of 2.23% out of all households. In order to mitigate distortion of the results caused by these cases additional rule was incorporated within the simulation and it conditions assessment of allowance only for families where number of people receiving PA or the amount of received PA in relevant reference period was higher than 0.

Several indicators showing differences between simulated 2013 setting of PA are presented in table 7.1 below. Even though maximum annual amount of PA is in terms of simulation approximately 1% higher, total amount of expenditures rises by 15% in comparison to baseline. Moreover the minimum amount of parental allowance rose by 600% after the simulation, which is caused mainly by already mentioned inability to identify exact number of months for receiving the allowance, but also by simplification of the model via acceptance of several assumptions about behavior of individuals. Especially rational choice assumption that would mean that every eligible individual is taking maximum amounts of allowance in order to maintain certain living standard and avoid possible losses caused by the passage of time.

Tab. 7.1 Annual parental allowance - descriptive statistics in CZK

Parental allowance	Minimum	Maximum	Sum	Mean
Dataset information	3 800	136 800	22 103 151 100	64 980
Simulation	22 800	138 000	25 456 194 775	74 838
% change	600.00	0.88	15.17	15.17

Source: self-processed based on EU-SILC data

Consequently the at risk of poverty threshold increased as well from CZK 116 092.57 to CZK 116 243.28. The population poverty rate is 9.2%. Poverty rate of households with children slightly dropped to 9.7% while poverty rate among childless households remains 9.1%. The rate of child income poverty after simulation declined marginally from 10.9% to 10.7% for children at age from 0 to 25. This means that adopted assumptions caused slight improvement in the income situation of families with children and at the same time significant increase in expenditure on parental allowance. In another words 4 778 children would get above the poverty threshold for the price of CZK 3.35 billion.

As already mentioned in the beginning of this chapter, the question of how the current development of the parental allowance affects the levels of child poverty is in place. That is why after the calibration and validation of the model the parameters of parental allowance were adjusted to the current setting. But differing are only reduction limits for computation of daily assessment base.[45] Which means that after applying higher reduction limits the individual DABs raised in general but outcomes in terms of parental allowance and child income poverty rate remained unchanged.

[45] In 2015 the reduction limits are set as follows: CZK 888, CZK 1 331, CZK 2 662.

7.2 Finnish parental allowances

Initial intention to simulate the Finnish parenthood allowances and the Czech parental allowance at both datasets - Czech and Finnish - was based on knowledge of EU-SILC data structure for the Czech Republic. Unfortunately in the end the structure of acquired Finnish dataset means that the intended scenario cannot be implemented due to lack of information essential for simulation with Finnish data. Usually in the case of microsimulations at supranational level the necessary information is imputed from additional national databases which here cannot be accessed here.

In search of a possible procedure for at least partial simulation of parenthood allowances in Finnish conditions the methodology of the European microsimulation model - EUROMOD - for Finland was consulted. But unfortunately also within EUROMOD the same conclusion was reached - parental/paternal allowances are not simulated due to lack of information and child home care allowance is only partially simulated. (EUROMOD, 2014) The most fundamental problem is the lack of data about the exact number and age of children in the family which forms a base for determining entitlement to individual parenthood allowances. Moreover all of the family benefits are included in one aggregate variable which precludes monitoring of their drawing (entitlement, amount). For these reasons the attention needs to be focused more on the simulation of the Finnish parenthood allowances in the Czech conditions and observation of its influence on overall expenditure on parental allowances and child poverty.

As the benefits that can be considered equivalent to the Czech parental allowance were in the chapter 4 identified parental allowance, paternal allowance, child home care allowance and flexible home care allowance. This choice is due to their drawing in the period when the youngest child is aged from 0 to 3 years. For preschool children older than 3 years financial support can be obtained in a form of private day care allowance (herein also PDCA) but its aim is to facilitate the provision of private child care and it is paid directly to the care provider. Because PDCA is not paid out to families and influences their financial situation indirectly in case they are not making use of municipal child care facilities (not observable) this benefit is not included in the simulation. From this arises first significant difference between Finnish and Czech system, where maximum length of receiving support is one year longer.

Which allowance and at what amount will be drawn is determined on the basis of the age of the youngest child and previous annual earnings (herein also PAE). Thus in cases when it cannot be done otherwise the same procedure as in the Czech system is used to designate previous earnings by creating estimates based on gender, age group and level of education of a parent.

Parental and paternal allowance are drawn in the same amount they only differ in terms of duration. The amount of disbursements if influenced by the previous earnings in a form of regressive rates for different income levels. The lower income limit identifies the group of families that are drawing allowance at minimum rate. The income in-between the lower and upper limit is recalculated by uniform assessment rate. When income exceeds the upper limit the assessment rate drops as the income raises. Due to lack of information about the method for determination of assessment rates above the upper limit and also to simplify the model income intervals were created and for each only one assessment rate was assigned via running volume of relevant scenarios in Finnish KELA calculator. Child/family allowances in Finland are not tied to subsistence or living minimum but to national pensions index that helps to keep up with the inflation. It brings up the question of how to find a common ground for comparison of the Finnish settings to the Czech ones. Income median is used to create estimates of previous earnings and to identify poverty rate thus it was also chosen as a reference point for conversion of Finnish limits to CZK. [46]

Child home care allowance (herein also CHCA) consists of fixed amount and supplement. The fixed part is depending upon the age of the youngest child and number and age of siblings. Another factor that affects the CHCA payout is the drawing of maternity or parental allowance. If maternity or parental allowance is drawn the calculated amount of CHCA is compared to it. CHCA will not be paid out if for example parental allowance is received at higher amount. If parental allowance is lower than allotted CHCA only the difference of the two is paid out on behalf of the CHCA. Here arises a complication within the simulation of CHCA due to lack of information about maternity benefit drawn, but as the simulation is to the extent possible limited only to families drawing parental allowance in the corresponding age of the youngest child the control for amount of maternity allowance is omitted. The supplement is computed differently for particular combinations of family size and income.

During the same period that is covered by child home care allowance the families might be eligible for flexible care allowance instead. Flexible care allowance is paid under the condition that one or both parents work part-time and also look after their child. The amount depends on whether at least one of the parents works at maximum 60% or 80% of regular hours (in CR 24 to 32 hours a week). This condition is controlled for on account of variable recording usual number of hours worked per week and number of months worked.

[46] For example income limit representing 40% of Finnish income median is recalculated as 40% of Czech income median.

Also here the presumption of rational choice is applied, which means that allowances are drawn at maximum amount and duration. Coefficients for average annual duration of drawing are calculated as well and in the same manner as for the Czech simulation. All of the simulated allowances are in Finland taxable incomes so this fact is taken into account and after the simulation the amount of calculated parental allowances is reduced by the tax rate of 15%. Computation of taxes in Finland is very complex procedure, the rate is progressive and defined by the type and level of income, municipality and parish. Accurate conversion to the Czech conditions is not feasible but a 15% withholding tax utilized in the Czech system can be considered as an adequate substitute to bring the simulation closer to original setting.

Given the fact that the Finnish parental allowances cannot be observed or simulated at the Finnish dataset the possibilities for calibration and validation of the model are very limited. Outcomes are again randomly checked in order to confirm that amounts of calculated allowances comply with household characteristics and economic situation. However the outcomes cannot be compared to allowances that were actually paid out and entitlement cannot be confirmed by observing households that were eligible or received allowances at the time of survey.

Table 7.2 below shows the outcomes in comparison to baseline in terms of simulation before and after tax deduction. Even though before taxation the maximum amount of allowances is slightly higher all of the remaining figures show significant drop. This is partially due to the shorter period covered by the provision of these benefits. Also higher amounts of support are paid out only during the child's first year of age and the financial support plummets after that. And that goes especially for those with income exceeding limit for receiving no child home care supplement.[47] The mean amount of allowance has decreased even more due to larger target group.[48]

[47] For example family sized 2+eligible child aged 2 with monthly income above CZK 22 469 cannot receive child home care allowance supplement and the monthly CHCA is CZK 2 746.85. Only families with income under CZK 13 870 per month are eligible for full amount of the supplement - CZK 1469.98.

[48] Number of cases is limited to those who are initially eligible for PA, those who have drawn PA and to those who are eligible to any amount of Finnish parental allowance above CZK 0, while in the baseline the target group comprises only the former two.

Tab. 7.2 Annual Finnish parental allowances - descriptive statistics in CZK

Parental allowance	Minimum	Maximum	Sum	Mean
Dataset information	3 800	136 800	22 103 151 100	64 980
Simulation	0	140 055	9 914 036 775	25 729
% change	-100.00	2.38	-55.15	-60.40
After tax deduction	0	119 047	8 426 931 258	21 870
% change after tax d.	-100.00	-12.98	-61.87	-66.34

Source: self-processed based on EU-SILC data

Also when parental/paternal allowance is no longer drawn the entitlement to child home care allowance or flexible care allowance is determined on the basis of employment information which only shows predominant employment status but exact specification cannot be observed. This means that some families that would be in reality eligible to these allowances might be excluded throughout the process of the simulation. The employment of mothers of young children is much lower in the Czech Republic than in Finland, which means that flexible care allowance has a considerably smaller target group (OECD Family Database, 2015b). Due to all of those factors and below presented results an increase in poverty rates is to be expected.

Before tax deduction poverty rate among households with children has risen to 10.9% which is an increase by a whole percent. Recalculated to children the income poverty rate is 12% out of all children which is also in comparison to baseline undesirable change. But as in general incomes decreased, the threshold for assessment of poverty also lowers to CZK 114 430.00 so less childless households are threatened by poverty (AROP rate is 8.4%) and overall poverty rate has only slightly increased to 9.3%. This confirms how wrong it would be to simply transform Finnish setting of parental allowances to Czech conditions and expect improvements.

After tax deduction the results are quite different. Among households with children only 9.4% are at risk of poverty. The AROP threshold has decreased to CZK 108 987.12 which means that only 6.4% of childless households are at risk of poverty and overall poverty rate is only 7.4%. Moreover also the income poverty rate among children decreased to 10.3%. The taxation of parental allowances lowers income level in general which also causes the income poverty rate decrease to.

Even though the simulation was very limited by lack of information and inability to apply certain mechanisms the obtained knowledge is very important for following alternative setting.

7.3 Alternative scenario for parental allowances in CR

In this subchapter alternative setting for parental allowances in CR is suggested. The aim is to combine the parameters used in both systems in order to create an instrument that would help effectively act on reducing the child poverty rate. Again setting of maternity allowance remains unchanged and the focus is on the support provided after maternity up to the child's fourth year of age.

The previous simulation of Czech parental allowance already showed that even if only the adopted assumptions would work perfectly in reality the situation of families with children would have slightly improved. Therefore also this finding influences the adjustments to the amount and duration of drawdown of parental allowance in following scenario.

Within this simulation the parental allowance is designed as a financial support drawn during the period of 12 months following the maternity allowance period. This period is further divided into halves when during the first six months significantly higher amounts of allowance may be paid out while in remaining six months payments are reduced. This approach is inspired by the Finnish utilization of shorter periods and higher amounts in the beginning of drawdown but it is also supported by the initial assumption of rational choice which suggest that individuals draw maximum amounts for maximum length of time. This is further facilitated by the fact that overall amount is not given so families do not have to choose between different combination of payouts and duration. As a new component modification of Finnish paternal allowance is incorporated. It allows for a joint care for a child and some extra time for fathers to stay home with children in their early childhood without substantial loss of income. These allowances are complemented by a simplified version of Finnish child home care allowance which here represents a form of low and fixed financial support up to the point when the youngest child reaches four years of age so the overall length of parental support is maintained and parents are not stripped of the choice to stay home with their children longer.

In all above mentioned cases, the payout is fully or partially dependent on previous or current individual/family income. Therefore the method previously utilized for determination of decisive income is applied also here. It has already been proven that small changes in the amount of the reduction limits and thus the daily assessment base do not ultimately affect the final amount of payouts and overall financial situation of the family, so they are left unchanged.

For parental allowance most of the rules are kept as they are in the Czech setting so only adopted changes are described below. After the calculation of amount from daily assessment base rather significant

adjustment is made. For the first six months of drawdown the limits for maximum amount of allowance are increased to

- CZK 9 500 if calculated amount is below this limit
- CZK 13 400 at maximum can be paid out if calculated amount exceeds the limit of CZK 13 400
- up to the calculated amount if the results are between CZK 9 500 and CZK 13 400

During the remaining six months of parental allowance these limits are CZK 7 600 and CZK 11 500. This part of setting is inspired by the Finnish system where significantly higher amounts are accessible in the early phase of parenthood financial support. On the other hand for the cases when decisive income cannot be assigned for either parent different scenario is applied that is more in compliance with Czech mechanism. During the first six months the monthly allowance is CZK 8 500 and for the rest of the period it is lowered to CZK 4 250. Parental allowance can be drawn by either parent who personally and duly cares for her/his child younger 2 years.[49] No overall amount is established.

The calculation of paternal allowance is done in the same manner. For this allowance the overall duration can be up to 2 months therefore the higher payouts can be drawn during the first month while for the second month amounts are lower. Similarly as in the Finnish setting of this allowance a part of it can be drawn at the same time a mother draws parental allowance so both parents can stay at home and care for their child. This means that a one month out of the two can be drawn for the purposes of joint care and the other is to allow parents to for example take turns and so prolong the duration of parental/paternal allowance or it may allow mother to arrange an agreement with her employer that she will continue to work one day per week. It can be drawn in one continuous period, in several shorter periods or even as separate days, for example when parents agree that mother will take up maternal/parental allowance and father will arrange with his employer that he will stay at home taking care of a child every Thursday and draw paternal allowance. In this example first thirty Thursdays the care can be joint and maternal/parental allowance is paid out to the mother and paternal allowance is paid to the father.

Child home care allowance can be paid out after the entitlement to parental/paternal allowance ends and until the youngest child reaches four years of age. It is divided in two parts - base amount, supplement.

[49] The parental allowance is designed with respect to maternity allowance which can be up to 37 months in case of multiple births.

The calculation is tied to the number of family members and family income, specifically to family living minimum norm utilized in CR. The base amount is set at

- CZK 2 750 for the youngest child under the age of four,
- CZK 900 for each additional child aged under four,
- CZK 500 older than four years but still in a preschool age (4 to 6 years).

The eligibility to the supplement is tested by comparing family income to family living minimum multiplied by 2.4.[50] When a monthly family income is lower than monthly family living minimum the family is entitled to the child home care allowance supplement of CZK 2 000.

In terms of simulation the problem of determining exact duration of drawdown persists so for calculation of average annual amount of allowances coefficients are used again. Same assumptions described in the subchapter 7.1 also applied here, so if characteristics of a family suggest that it is entitled to these allowances it is considered that they draw them at a maximum amount and duration.

Table 7.3 below again shows figures comparing baseline to simulation of alternative setting. The maximum payouts throughout the simulation are slightly lower as is the sum of expenditures on simulated parental allowances (including all benefits described above). T he mean of payouts is lower for simulated scenario due to larger target group.[51] These figures show that the alternative is fiscally neutral and does not attempt to lower or increase the amount of expenditures in order to influence the poverty rate.

Tab. 7.3 Annual parental allowance - descriptive statistics in CZK for alternative setting

Parental allowance	Minimum	Maximum	Sum	Mean
Dataset information	3 800	136 800	22 103 151 100	64 980
Simulation	2 283	129 275	21 999 562 659	49 861
% change	-39.92	-5.50	-0.47	-23.27

Source: self-processed based on EU-SILC data

[50] The same multiple of living minimum is used to assess eligibility for child allowance in CR.

[51] Therefore if the mean value was calculated for the same number of cases in baseline it would be CZK 50 096 and percentage change after simulation would be only- 0.47 percent.

After the simulation the overall poverty drops to 7.2% of all households. A more pronounced decrease in poverty rate of childless households can be observed as it drops to 6.6% from the baseline of 9.1%. But this time also the poverty rate among households with children declines from the baseline of 9.9% to alternative 8.3%. When recalculated to children the income poverty rate is 9.2% or in another words it is 1.7 percentage point lower than baseline. These results confirm that the setting of the Czech parental allowance could be adjusted in a manner inspired by Finnish mechanism so it helps to lower the child income poverty but does not increase the public expenditures in an undesirable way. On the other hand the AROP threshold also decreased to CZK 109 453.45 as in the previous simulation which means that the decline in poverty rates is partially caused by lower income level in general.

7.4 Summary of results

In this subchapter a general overview of all results obtained above is provided in a form of comparison tables in order to shortly evaluate the tested scenarios.

Table 7.4 summarizes baseline and outcomes of all above presented simulations in terms of parental allowance. Which means that by looking at the differences between the simulated allowance and the actual allowance that was paid out we can determine to what extent the missing information and adopted assumptions distort the outcomes. Although the alternative setting seems to be fiscally neutral and even closer to the baseline than the initial simulation of the Czech design, we have to take into account the fact that in the first simulation the assumptions and adjustments due to missing information lead to increase in expenditures by 15%. This means that results for the simulation of alternative setting might be influenced in the same manner. Also the mean values of parental allowance are much lower in for simulation 2 and 3 due to the fact that payouts are not tied only to eligibility for PA or actual drawing of PA, but all those who fulfill the established conditions can draw the support. This results in larger target group and lower mean value.

Tab. 7.4 Annual parental allowance - overview of descriptive statistics in CZK

Parental allowance		Minimum	Maximum	Sum	Mean
Dataset information		3 800	136 800	22 103 151 100	64 980
Simulation 1	CZK/year	22 800	138 000	25 456 194 775	74 838
	% change	600.00	0.88	15.17	15.17
Simulation 2*	CZK/year	0	120 104	8 426 931 258	21 870
	% change	-100.00	-12.98	-61.87	-66.34
Simulation 3	CZK/year	2 283	129 275	21 999 562 659	49 861
	% change	-39.92	-5.50	-0.47	-23.27

Source: self-processed based on EU-SILC data

** For the second simulation only the final version after taxes is presented.*

An overview of the changes in income poverty rate is presented in the table 7.5 below. As here used income poverty rate (relative) is influenced by the level of income the information about changes in the amount of threshold for AROP. The second and the third simulation show improvements in the income poverty rate along with decline in the income level here represented by the threshold. With respect to previous simulations the alternative setting (third simulation) brought better results in terms of children and households with children with lower decrease in income level. Therefore it shows a possible way to improve the financial situation of household with children by taking inspiration from the Finnish setting of parental allowances.

Tab. 7.5 Income poverty rate (%), poverty threshold (CZK) - overview of changes in percentage points

At risk of poverty		Households			Children	Threshold
		total	with children	no children		
Dataset information		9.2	9.9	9.1	10.9	116 092.57
Simulation 1	CZK/year	9.2	9.7	9.1	10.7	116 243.28
	p.p. change	0	-0.2	0	-0.2	0.13
Simulation 2*	CZK/year	7.4	9.4	6.4	10.3	108 987.12
	p.p. change	-1.8	-0.3	-2.6	-0.4	-6.12
Simulation 3	CZK/year	7.2	8.3	6.6	9.2	109 453.45
	p.p. change	-2.0	-1.6	-2.5	-1.7	-5.72

Source: self-processed based on EU-SILC data

** For the second simulation only the final version after taxes is presented.*

CONCLUSION

The Czech Republic and Finland utilize very different approaches to family policy. In the Czech Republic the developments in the past decade suggest that the focus is on stable and universal direct support and expansion of indirect support. On the other hand Finland develops mainly a wide range of parenthood allowances, which are usually tied to a shorter period and smaller target group. Finland has also strongly developed system promoting the reconciliation of work and family life. In comparison to the Czech Republic, Finland along with most of the other Nordic countries manages to achieve lower child poverty rate, which is one of the reasons why the Nordic model of family policy is often presented as an ideal and a source of inspiration. Therefore the research presented in this thesis serves to deepen the comparison of the Czech Republic and Finland in terms of family policy model.

More specifically the objective is to compare the Czech and Finnish approach to family policy with focus on selected family policy instruments. The comparison is based not only on research of theoretical knowledge but also on several microsimulation models using EU-SILC datasets for CR and Finland. For closer examination and simulations Czech parental allowance and its equivalents utilized within the Finnish family policy were chosen. The instrument was chosen with regard to its' importance within the Czech family policy.

The obtained knowledge about parameters and rules for eligibility and calculation of parental allowances were transferred to microsimulation models via statistical program SPSS. Where the rules of simulation could not be set on the basis of information available in the dataset, assumptions based on complementing statistics and economic theory were adopted. The first simulation showed these assumptions slightly distort the results in terms of parental allowance but also child poverty rate. If in fact these assumptions were valid at all times the income situation of households with children would slightly improve.

The structure of Finnish dataset caused inability to run simulations in Finnish conditions, therefore the models were designed for simulations on Czech data. Consequently the simulation of the Finnish allowances on the Czech data is associated with various problems such as inability to calibrate and validate the model or inability to transfer the rules and conditions accurately once they are tied to mechanisms that do not exist in the Czech system.

Suggested alternative design of parental allowance incorporates the Czech setting complemented by findings from previous simulations and selected Finnish allowances. Fundamental changes are that higher amounts can be drawn in the initial phase of parental allowance and the duration of drawdown is significantly shorter. The shorter period for drawing the parental allowance is compensated by inclusion of

modifications of Finnish instruments that allow for lower fixed payouts in the time remaining until the youngest child reaches the fourth year of age. These are then partially tested with respect to family living minimum in order to ensure the support of low income families. Simulation results confirmed that applied modifications help to positively influence the child income poverty without additional increase in public expenditures. Therefore here presented proposal for a new design of parental allowances could be a source of inspiration for more elaborate research and possible change in setting.

Results are inevitably influenced by the fact that created model along with adopted assumptions and definitions simplify the reality and do not incorporate all the various aspects of individual decision making and behavior. Aside from individual choices, the actual impact on financial situation of families with children and child income poverty is also strongly influenced by the readiness of employers to support the reconciliation of work and family life, current development in the job market, but also the indirect support in the form of services that should complement the financial support provided via parental allowances.

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LIST OF ABBREVIATIONS

ADI	AVERAGE DAILY INCOME
AROP	AT RISK OF POVERTY
CERGE-EI	CENTER FOR ECONOMIC RESEARCH AND GRADUATE EDUCATION
CNB	CZECH NATIONAL BANK
CPS	CURRENT POPULATION SURVEY
CR	CZECH REPUBLIC
CZSO	CZECH STATISTICAL OFFICE
CHCA	CHILD HOME CARE ALLOWANCE
DAB	DAILY ASSESSMENT BASE
DSGE	DYNAMIC STOCHASTIC GENERAL EQUILIBRIUM
ECHP	EUROPEAN COMMUNITY HOUSEHOLD PANEL
EEA	EUROPEAN ECONOMIC AREA
EU	EUROPERAN UNION
EU-SILC	EUROPEAN UNION STATISTICS ON INCOME AND LIVING
MFA	MINISTRY OF FOREGN AFFAIRS OF FINLAND
MLSA	MINISTRY OF LABOR AND SOCIAL AFFAIRS THE CZECH REPUBLIC
MS	MEMBER STATE
MSAH	MINISTRY OF SOCIAL AFFAIRS AND HEALTH OF FINLAND
NATO	NORTH ATLANTIC TREATY ORGANIZATION
OECD	ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT
PA	PARENTAL ALLOWANCE
PAE	PREVIOUS ANNUAL EARNINGS
PDCA	PRIVATE DAY CARE ALLOWANCE
RL	REDUCTION LIMIT

LIST OF ATTACHMENTS

ATTACHMENT 1

Living and Subsistence Minimum in the Czech Republic

MPSV, 2013, available on: http://www.mpsv.cz/en/11854

(monthly in CZK)

Living Minimum (Životní minimum)

Single	3 410
First person in household	3 140
Second and other persons who are not a dependent child	2 830
Dependent child aged	
under 6 years	1 740
6 - 15 years	2 140
15 - 26 years	2 450

Subsistence Minimum (Existenční minimum)

Subsistence Minimum	2 200

Examples - Living Minimum (monthly in CZK) for

Single person household	**3 410**
2 adults	3 140 + 2 830 = **5 970**
1 adult with one child aged 5 years	3 140 + 1 740 = **4 880**
2 adults with one child aged 5 years	3 140 + 2 830 + 1 740 = **7 710**
2 adults with 2 children aged 8 and 16 years	3 140+ 2 830 + 2 140 + 2 450 = **10 560**
2 adults with 3 children aged 5, 8 and 16 years	3 140 + 2 830 + 1 740 + 2 140 + 2 450 =**12 300**

The government is authorized to increase the amounts of Living and Subsistence Minimum on January 1 if growth of consumer price index for sustenance and personal needs exceeds 5%. In the case of extraordinary circumstances the amounts can be indexed sooner.

ATTACHMENT 2

Model 1: Parental allowance in CR - Selected sections of syntax

```
*Calculation of average daily income and daily assessment base.
COMPUTE ADI=(INCOME_PA*12)/365.
VARIABLE LABELS ADI 'Daily labor income for purposes of DAB'.
EXECUTE.

COMPUTE DAB_0=ADI.
if (ADI>865)&(ADI<=1298) DAB_0=865+(ADI-865)*0.6.
if (ADI>1298)&(ADI<=2595) DAB_0=865+(ADI-865-(ADI-1298))*0.6+(ADI-1298)*0.3.
if (ADI>2595) DAB_0=865+(ADI-865-(ADI-1298))*0.6+(ADI-1298-(ADI-2595))*0.3.
VARIABLE LABELS DAB_0 'Daily assesment base before rounding'.
EXECUTE.

COMPUTE DAB_1=RND(DAB_0).
VARIABLE LABELS DAB_1 'Daily assesment base after rounding'.
EXECUTE.

*Calculation of PA with respect to maximum limits and rational choice.
COMPUTE RP=DAB_1*30*0.7.
IF (DAB_1*30*0.7>11500) RP=11500.
IF (DAB_1*30*0.7<7600) RP=7600.
EXECUTE.

*Conditions for computation of different scenarios for drawing parental allowance.
COMPUTE RP_0=0.
IF (VEK_MIN=0 AND ODPRAC_LET=0 AND ND0_4=1) AND (POB_RP>0 OR
RODP>0)RP_0=7600*3.
IF (VEK_MIN=0 AND ND0_4=1)AND (POB_RP>0 OR RODP>0) RP_0=RP*3.
IF (VEK_MIN=0 AND ND0_1>1 AND ODPRAC_LET=0)AND (POB_RP>0 OR RODP>0)
RP_0=7600*10.25.
IF (VEK_MIN=0 AND ND0_1>1 AND ND0_4=1) AND (POB_RP>0 OR RODP>0) RP_0=RP*10.25.
```

IF (VEK_MIN=0 AND ND2_3>0 AND ODPRAC_LET=0)AND (POB_RP>0 OR RODP>0) RP_0=2.79*7600+8.38*3800+7600*0.83.

IF (VEK_MIN=0 AND ND2_3>0 AND RP<11500)AND (POB_RP>0 OR RODP>0) RP_0=RP*12.

IF (VEK_MIN=0 AND ND2_3>0 AND ND_3=0 AND RP=11500)AND (POB_RP>0 OR RODP>0) RP_0=RP*7.4+RP*0.83.

IF (VEK_MIN=0 AND ND_3>0 AND RP=11500)AND (POB_RP>0 OR RODP>0) RP_0=(6900*11.17)+(RP*0.83).

IF (VEK_MIN=0 AND ND0_4>1 AND ND2_3=0 AND ODPRAC_LET=0)AND (POB_RP>0 OR RODP>0) RP_0=5.66*3800+7600*0.83.

IF (VEK_MIN=0 AND ND0_4>1 AND ND2_3=0)AND (POB_RP>0 OR RODP>0) RP_0=5.66*3800+RP*0.83.

IF (VEK_MIN=0 AND ND0_4>1 AND ND2_3=0 AND RP=11500)AND (POB_RP>0 OR RODP>0) RP_0=RP*3.

IF (VEK_MIN=1 AND ODPRAC_LET=0 AND ND0_4=1)AND (POB_RP>0 OR RODP>0) RP_0=7600*1.75+3800*10.25.

IF (VEK_MIN=1 and ODPRAC_LET>0 AND ND0_4=1)AND (POB_RP>0 OR RODP>0) RP_0=RP*10.25.

IF (VEK_MIN=1 AND ODPRAC_LET=0 AND ND0_4>1 AND ND2_3=0) AND (POB_RP>0 OR RODP>0)RP_0=3800*1.83+7600*9.

IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND0_4>1 AND ND2_3=0)AND (POB_RP>0 OR RODP>0) RP_0=3800*1.83+RP*9.

IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND0_4>1 AND ND2_3=0 AND RP=11500)AND (POB_RP>0 OR RODP>0) RP_0=RP*9.

IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND2_3>0 AND ND_3=0) AND (POB_RP>0 OR RODP>0)RP_0=RP*12.

IF (VEK_MIN=1 AND ND2_3>0 AND ND_3=0 AND ODPRAC_LET=0) AND (POB_RP>0 OR RODP>0)RP_0=1.75*3800+10.25*7600.

IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND_3>0 AND RP=11500) AND (POB_RP>0 OR RODP>0)RP_0=(6900*1.75)+(RP*10.25).

IF (VEK_MIN=1 AND ND_3>0 AND ODPRAC_LET=0)AND (POB_RP>0 OR RODP>0) RP_0=(3800*1.75)+(7600*10.25).

IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND_3>0 AND 7600<RP<11500)AND (POB_RP>0 OR RODP>0) RP_0=(6600*1.75)+(7600*10.25).

IF (VEK_MIN=2 AND ODPRAC_LET=0) AND (POB_RP>0 OR RODP>0)RP_0=3800*12.

```
IF (VEK_MIN=2 AND ODPRAC_LET>0 AND RP=7600) AND (POB_RP>0 OR
RODP>0)RP_0=RP*12.
IF (VEK_MIN=2 AND ODPRAC_LET>0 AND 7600<RP<11500) AND (POB_RP>0 OR
RODP>0)RP_0=RP*12.
IF (VEK_MIN=2 AND ODPRAC_LET>0 AND RP=11500) AND (POB_RP>0 OR
RODP>0)RP_0=RP*7.4.
IF (VEK_MIN=3 AND ODPRAC_LET=0) AND (POB_RP>0 OR RODP>0)RP_0=3800*12.
IF (VEK_MIN=3 AND RP=7600) AND (POB_RP>0 OR RODP>0) RP_0=6600*12.
IF (VEK_MIN=3 AND 7600<RP<11500) AND (POB_RP>0 OR RODP>0) RP_0=6600*12.
IF (VEK_MIN=3 AND RP=11500) AND (POB_RP>0 OR RODP>0) RP_0=3800*12.
VARIABLE LABELS RP_0 'Average annual amount of PA'.
EXECUTE.
```

ATTACHMENT 3

Model 2: Finnish parental allowance in CR - Selected sections of syntax

```
*Computation of annual parental allowances.
COMPUTE PFB_A=0.
IF (VEK_MIN=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*3.37.
IF (VEK_MIN=1 and (EA_P=9 OR EA_M=9))
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/
12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=1 AND EMP_M=2 AND MES_ZAMM<12)
PFB_A=((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/(12-
MES_ZAMM)+FCA_M.
IF (VEK_MIN=1 AND EMP_P=1 AND EMP_M=2 AND MES_ZAMM<12 and FCA_M=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/
12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=1 AND EMP_M=2 AND MES_ZAMM=12) PFB_A=FCA_M.
IF (VEK_MIN=1 AND EMP_P=1 AND EMP_M=2 AND MES_ZAMM=12 AND FCA_M=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/
12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=1  AND MES_ZAMP<12)
PFB_A=((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D))/(12-
MES_ZAMP)+FCA_P.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=1  AND MES_ZAMP<12 and FCA_P=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/
12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=1  AND MES_ZAMP=12) PFB_A=FCA_P.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=1  AND MES_ZAMP=12 and FCA_P=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/
12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM<12)
PFB_A=((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D))/(12-
MES_ZAMM)+FCA_P+FCA_M.
```

IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM<12 AND FCA_M=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM<12 AND FCA_P=0)
PFB_A=(((PA_DA1*30+PA_DA2*128)+(PA_DA1*30+PA_DA2*24)+(41*CHCA_D2))/12)*4.66+(305/12)*1.32*CHCA_D.
IF (VEK_MIN=1 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM=12) PFB_A=FCA_P+FCA_M.

IF (VEK_MIN=2 and (EA_P=9 OR EA_M=9)) PFB_A=(305)*CHCA_D.
IF (VEK_MIN=2 AND (EMP_P=1 AND EMP_M=2 AND MES_ZAMM<12))
PFB_A=(CHCA_D*25.4)*(12-MES_ZAMM)+FCA_M.
IF (VEK_MIN=2 AND EMP_P=1 AND EMP_M=2 AND FCA_M=0) PFB_A=CHCA_D*305.
IF (VEK_MIN=2 AND (EMP_P=1 AND EMP_M=2 AND MES_ZAMM=12)) PFB_A=FCA_M.
IF (VEK_MIN=2 AND (EMP_P=2 AND EMP_M=1 AND MES_ZAMP<12))
PFB_A=(CHCA_D*25.4)*(12-MES_ZAMP)+FCA_P.
IF (VEK_MIN=2 AND EMP_P=2 AND EMP_M=1 AND FCA_P=0) PFB_A=CHCA_D*305.
IF (VEK_MIN=2 AND (EMP_P=2 AND EMP_M=1 AND MES_ZAMP=12)) PFB_A=FCA_P.
IF (VEK_MIN=2 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM<12)
PFB_A=(CHCA_D*25.4)*(12-MES_ZAMM)+FCA_M+FCA_P.
IF (VEK_MIN=2 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM<12) PFB_A=FCA_P+FCA_M.
IF (VEK_MIN=2 AND EMP_P=2 AND EMP_M=2) AND (FCA_P=0 OR FCA_M=0)
PFB_A=CHCA_D*305.
IF (VEK_MIN=2 AND EMP_P=1 AND EMP_M=1) PFB_A=0.

IF (VEK_MIN=3 AND EMP_P=1 AND EMP_M=3) PFB_A=(305/12)*6.5*CHCA_D.
IF (VEK_MIN=3 AND EMP_P=1 AND EMP_M=2 AND MES_ZAMM<12)
PFB_A=(CHCA_D*25.4)*(12-MES_ZAMM)+FCA_M.
IF (VEK_MIN=3 AND EMP_P=1 AND EMP_M=2 AND MES_ZAMM=12) PFB_A=FCA_M.
IF (VEK_MIN=3 AND EMP_P=1 AND EMP_M=1) PFB_A=0.
IF (VEK_MIN=3 AND EMP_P=2 AND EMP_M=1 AND MES_ZAMP<12)
PFB_A=(CHCA_D*25.4)*(12-MES_ZAMP)+FCA_P.
IF (VEK_MIN=3 AND EMP_P=2 AND EMP_M=1 AND MES_ZAMP=12) PFB_A=FCA_P.
IF (VEK_MIN=3 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM<12)
PFB_A=(CHCA_D*25.4)*(12-MES_ZAMM)+FCA_M+FCA_P.
IF (VEK_MIN=3 AND EMP_P=2 AND EMP_M=2 AND MES_ZAMM=12) PFB_A=FCA_P+FCA_M.

```
IF (VEK_MIN=3 AND EMP_P=2 AND EMP_M=3) PFB_A=(305/12)*6.5*CHCA_D.
if (vek_min=3 and emp_p=3) pfb_a=(305/12)*6.5*CHCA_D.
VARIABLE LABELS PFB_A 'Parental Family Benefits - average annual amount'.
EXECUTE.
```

ATTACHMENT 4

Model 3: Alternative setting of parental allowance in CR - Selected sections of syntax

```
* Alternative setting of Parental allowance.
COMPUTE RP_A=0.
IF (VEK_MIN=0 AND ODPRAC_LET=0 AND ND0_3=1) AND (POB_RP>0 OR
RODP>0)RP_A=8500*3.
IF (VEK_MIN=0 AND ODPRAC_LET>0 AND ND0_3=1)AND (POB_RP>0 OR RODP>0)
RP_A=RP1*3.
IF (VEK_MIN=0 AND ND0_1>1 AND ODPRAC_LET=0)AND (POB_RP>0 OR RODP>0)
RP_A=8500*0.83+8500*5.17+4250*4.25.
IF (VEK_MIN=0 AND ND0_1>1) AND (POB_RP>0 OR RODP>0) RP_A=RP1*6+RP2*4.25.
IF (VEK_MIN=0 AND ND0_1=1 AND D_2>1 AND ODPRAC_LET=0)AND (POB_RP>0 OR
RODP>0) RP_A=8500*0.83+4250*1.75.
IF (VEK_MIN=0 AND ND0_1=1 AND D_2>1) AND (POB_RP>0 OR RODP>0)
RP_A=RP1*0.83+RP2*1.75.
IF (VEK_MIN=0 AND ODPRAC_LET=0 AND D_2=1 AND ND0_3>1) AND (POB_RP>0 OR
RODP>0)RP_A=8500*3.
IF (VEK_MIN=0 AND D_2=1 AND ND0_3>1)AND (POB_RP>0 OR RODP>0) RP_A=RP1*3.

IF (VEK_MIN=1 AND ODPRAC_LET=0 AND ND0_3=1)AND (POB_RP>0 OR RODP>0)
RP_A=8500*4.75+4250*4.25.
IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND0_3=1)AND (POB_RP>0 OR RODP>0)
RP_A=RP1*4.75+RP2*4.25.
IF (VEK_MIN=1 AND ODPRAC_LET=0 AND D_2>1) AND (POB_RP>0 OR
RODP>0)RP_A=8500*4.75+4250*4.64.
IF (VEK_MIN=1 AND ODPRAC_LET>0 AND D_2>1)AND (POB_RP>0 OR RODP>0)
RP_A=RP1*4.75+RP2*4.64.

IF (VEK_MIN=2 AND ODPRAC_LET=0) AND (POB_RP>0 OR RODP>0) RP_A=4250*2.25.
IF (VEK_MIN=2 AND ODPRAC_LET>0) AND (POB_RP>0 OR RODP>0) RP_A=RP2*2.25.
VARIABLE LABELS RP_A 'Average annual amount of PA - alternative setting'.
EXECUTE.
```

```
*Alternative setting of Paternal allowance.
COMPUTE PtA_A=0.
IF (VEK_MIN=0 AND ODPRAC_LET=0 AND ND0_3=1) AND (POB_RP>0 OR
RODP>0)RP_A=8500+4250.
IF (VEK_MIN=0 AND ODPRAC_LET>0 AND ND0_3=1)AND (POB_RP>0 OR RODP>0)
RP_A=RP1+RP2.
IF (VEK_MIN=1 AND ODPRAC_LET=0 AND ND0_3=1)AND (POB_RP>0 OR RODP>0)
RP_A=8500+4250.
IF (VEK_MIN=1 AND ODPRAC_LET>0 AND ND0_3=1)AND (POB_RP>0 OR RODP>0)
RP_A0=RP1+RP2.
IF (VEK_MIN=2 AND ODPRAC_LET=0) AND (POB_RP>0 OR RODP>0) RP_A=8500+4250.
IF (VEK_MIN=2 AND ODPRAC_LET>0) AND (POB_RP>0 OR RODP>0) RP_A=RP1+RP2.
VARIABLE LABELS PtA_A 'Average annual amount of PtA - alternative setting'.
EXECUTE.

*Monthly Child Home Care Allowance - base amount.
COMPUTE CHCA_M=0.
IF (VEK_MIN=1 AND D_2=1 AND CHILD3_6=0) CHCA_M=2750.
IF (VEK_MIN=1 AND D_2>1 AND CHILD3_6=0) CHCA_M=2750+(900*(D_2-1)).
IF (VEK_MIN=1 AND D_2>1 AND CHILD3_6>0) CHCA_M=2750+(900*(D_2-1))+(500*CHILD3_6).
IF (VEK_MIN=1 AND D_2=1 AND CHILD3_6>0) CHCA_M=2750+(900*CHILD3_6).

IF (VEK_MIN=2 AND D_2=1 AND CHILD3_6=0) CHCA_M=2750.
IF (VEK_MIN=2 AND D_2>1 AND CHILD3_6=0) CHCA_M=2750+(900*(D_2-1)).
IF (VEK_MIN=2 AND D_2>1 AND CHILD3_6>0) CHCA_M=2750+(900*(D_2-1))+(500*CHILD3_6).
IF (VEK_MIN=2 AND D_2=1 AND CHILD3_6>0) CHCA_M=2750+(500*CHILD3_6).

IF (VEK_MIN=3 AND CHILD3_6=1) CHCA_M=2750.
IF (VEK_MIN=3 AND CHILD3_6>1) CHCA_M=2750+(500*(CHILD3_6-1)).

IF (VEK_MIN=4 AND CHILD3_6=1) CHCA_M=2750.
IF (VEK_MIN=4 AND CHILD3_6>1) CHCA_M=2750+(500*(CHILD3_6-1)).
VARIABLE LABELS CHCA_M 'Monthly Child Home Care Allowance'.
EXECUTE.
```

```
*Control for family living minimum.
COMPUTE INCOME_LIMIT=2.4*ZIVMIN.
VARIABLE LABELS INCOME_LIMIT 'Income limit for CHCA Supplement'.
EXECUTE.

* Child Home Care Allowance Supplement with respect to household income.
COMPUTE SR_CHCA=0.
IF (INCOME_HS<INCOME_LIMIT) SR_CHCA=2000.
VARIABLE LABELS SR_CHCA 'Monthly CHCA Supplement with respect to family income'.
EXECUTE.

*Total monthly amount of CHCA.
COMPUTE CHCA_TM=(CHCA_M+SR_CHCA).
VARIABLE LABELS CHCA_TM 'Total monthly amount of Child Home Care All'.
EXECUTE.

*Average annual amount of CHCA.
COMPUTE CHCA_A=0.
IF (VEK_MIN=1) CHCA_A=CHCA_TM*0.83.
IF (VEK_MIN=2) CHCA_A=CHCA_TM*9.
IF (VEK_MIN=3) CHCA_A=CHCA_TM*12.
IF (VEK_MIN=4) CHCA_A=CHCA_TM*6.5.
VARIABLE LABELS CHCA_A 'Average annual amount of CHCA'.
EXECUTE.

*Sum of average annual parental allowances.
COMPUTE PB_A=RP_A+PtA_A+CHCA_A.
VARIABLE LABELS PB_A 'Average annual amount of parental allowances'.
EXECUTE.
```

ATTACHMENT 5

List of variables

ADI	AVERAGE DAILY INCOME FOR CALCULATION OF PARENTAL ALLOWANCE
CHCA_D	DAILY AMOUNT OF CHILD HOME CARE ALLOWANCE
CHCA_M	MONTHLY CHILD HOME CARE ALLOWANCE
CHCA_TEST	CHCA TESTED WITH RESPECT TO PA/PtA
CHILD	CHILDREN IN A HOUSEHOLD (STRING)
CHILD3_6	CHILDREN IN A HOUSEHOLD AGED 3 TO 6
DAB	PARENTAL ALLOWANCE DAILY ASSESSMENT BASE
DETI	NUMBER OF CHILDREN IN A HOUSEHOLD
EA_P	EMPLOYMENT STATUS - FATHER
EA_M	EMPLOYMENT STATUS - MOTHER
FCA_P	ANNUAL AMOUNT OF FLEXIBLE CARE ALLOWANCE - FATHER
FCA_M	ANNUAL AMOUNT OF FLEXIBLE CARE ALLOWANCE - MOTHER
INCOME_HS	HOUSHOLD INCOME FOR PURPOSES OF CHCA SUPPLEMENT
INCOME_LIMIT	INCOME LIMIT BASED AS 2.4MULTIPLY OF FAMILY LIVING MINIMUM
INCOME_PA	PARENTAL ALLOWANCE DECISIVE INCOME
INCOME_TM	PERSONAL TOTAL MONTHLY INCOME
MES_ZAM	NUMBER OF MONTHS WORKED
ND0_6	NUMBER OF CHILDREN IN A HOUSEHOLD AGED 0 TO 6
ND0_4	NUMBER OF CHILDREN IN A HOUSEHOLD AGED 0 TO 4
ND0_1	NUMBER OF CHILDREN IN A HOUSEHOLD AGED 0 TO 1
ND2_3	NUMBER OF CHILDREN IN A HOUSEHOLD AGED 2 TO 3
ND_3	NUMBER OF CHILDREN IN A HOUSEHOLD AGED 3
NoFM	NUMBER OF FAMILY MEMBERS FOR PURPOSES OF CHCA SUPPLEMENT
ODPRAC	HOURS USUALLY WORKED (PER WEEK)
ODPRAC_P	HOURS USUALLY WORKED (PER WEEK) - FATHER
ODPRAC_M	HOURS USUALLY WORKED (PER WEEK) - MOTHER
ODPRAC_LET	YEARS OF EMPLOYMENT
PA_DA1	DAILY AMOUNT OF PARENTAL/PATERNAL ALLOWANCE - FINLAND (FIRST 30 DAYS)
PA_DA2	DAILY AMOUNT OF PARENTAL/PATERNAL ALLOWANCE - FINLAND (AFTER 30TH DAY)
PAE	PREVIOUS ANNUAL EARNINGS
PB_A	AVERAGE ANNUAL AMOUNT OF PARENTAL ALLOWANCES - ALTERNATIVE
PFB_A	ANNUAL AMOUNT OF ALL PARENTAL ALLOWANCES - FINLAND
PFB_AT	ANNUAL AMOUNT OF ALL PARENTAL ALLOWANCES AFTER TAXES - FINLAND
PKOEF	HOUSEHOLD CROSS-SECTIONAL WEIGHT
PKOEF_D	CHILDRENS CROSS-SECTIONAL WEIGHT
PKOEF_P	PERSONAL CROSS-SECTIONAL WEIGHT
PL031	SELF-DEFINED CURRENT ECONOMIS STATUS
PME	PREVIOUS MONTHLY EARNINGS
POB_RP	NUMBER OF PERSONS ELIGIBLE FOR PARENTAL ALLOWANCE
PORADI	PERSONAL POSITION IN A HOUSEHOLD

PRIJ_EJ	DISPOSABLE INCOME PER CONSUMPTION UNIT ACC EU
PtA_A	AVERAGE ANNUAL AMOUNT OF PATERNAL ALLOWANCE - ALTERNATIVE
RODP	ANNUAL AMOUNT OF PARENTAL ALLOWANCE RECEIVED
RP	MAXIMUM ACCESSIBLE AMOUNT OF PARENTAL ALLOWANCE
RP_0	AVERAGE ANNUAL AMOUNT OF PA - SIMULATED
RP1	PARENTAL ALLOWANCE - ALTERNATIVE (FIRST 6 MONTHS)
RP2	PARENTAL ALLOWANCE - ALTERNATIVE (LAST 6 MONTHS)
RP_A	AVERAGE ANNUAL PARENTAL ALLOWANCE - ALTERNATIVE
SR_CHCA	MOTHLY CHCA SUPPLEMENT
VEK_MIN	AGE OF THE YOUNGEST HOUSEHOLD MEMBER
VZTAH	PERSONAL HOUSEHOLD STATUS
ZIVMIN	HOUSEHOLD LIVING MINIMUM